

City of Concord

Technical Standards Manual

Article VI

Electric System

Electric Construction and Metering Specifications



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1.0 Introduction

The City of Concord Electric Systems Department has constructed, operated, and maintained an electric transmission and distribution system for over 100 years. During this time, tremendous technological changes have occurred and a need to standardize has been realized. It is the City's intention to provide its citizens and customers with safe and reliable electric power at a competitive price.

This Manual provides both an overview and detailed specifications for the operation of the electric system and for customer connections to the system. This Manual is not meant to be all-inclusive, but it does specify allowable connections and address mandatory specifications for equipment connected to the City's electric system.

If a user does not understand or has a question concerning this Manual, they should contact the Director of Electric Systems at (704) 920-5301.

2.0 Customer Delivery Point

- 2.1. **Location.** It is the customer's responsibility to provide a location for the electric service connection (delivery point). Transformer noise levels should be taken into consideration. On occasion, the customer may want to utilize a delivery point that is not consistent the City's least-cost approach. The City may provide the delivery point at the location requested by the customer, if the customer pays for the extra expense.
- 2.2. **Easement and Access.** The City must be granted an easement of its selection and the right of continuous access to its facilities for the purpose of installation, maintenance, and meter reading. The City will need space for the installation of wiring, poles, guys, anchors, transformers, fences, and any other apparatus used in furnishing electricity to the customer. If the only space available for metering equipment is inside the customer's structure, the appropriate indoor space must be dedicated. If equipment is located inside a building, the customer must bear the expense of constructing the space to meet electrical, fire, explosion, and ventilation code requirements. Sometimes the customer will have to construct special floors, hallways, and elevators to accommodate the moving of electrical equipment.
- 2.3. **Security.** The City has the right to secure and lock the space dedicated to the City and its facilities to prevent access and interference by any unauthorized parties, including the customer, the customer's employees, or the general public. The customer may be asked to provide an appropriate security fence enclosure for the equipment.

- 2.4. **Single Delivery Point.** Electric service will normally be supplied to a single delivery point for each customer. A single delivery point may also be used to supply a customer with separate structures or facilities, if the City, at its discretion, deems a single delivery point safe and otherwise appropriate.
- 2.5. **Multiple Delivery Points.** The customer and the City must work together to decide which facilities each delivery point will supply.
- 2.6. **Assignment of Responsibility.**
- a. *Metering Equipment.* The City will provide, own, and maintain the meter, meter base, and other metering facilities. The customer will usually be asked to install the meter base since this is often the point of connection to the customer's wiring. Also, the customer must provide a suitable location for the meter. The City may ask the customer to provide a one-inch conduit from a transformer pad to the meter location.
 - b. *Transformers.* The City will provide any instrument transformer enclosures. The customer will provide any necessary weatherproof troughs for wiring connections and be responsible for providing the connectors and making the connections in a trough. The City may meter the primary side of the delivery point transformer when metering the secondary side is not feasible. The City will provide, install, own, and maintain all primary metering. When the delivery point for commercial and industrial customers is located on the customer's property and a pad mounted transformer is required, the customer will be responsible for providing a reinforced concrete transformer pad that has been approved by the City. The customer also will be responsible for providing all conduit turnouts to access the pad. When the transformer pad is the point of delivery, the customer will provide and install secondary conduit and conductors. The City will provide the connectors and make all connections.
- 2.7. **Overhead Installations.** The customer will be responsible for providing and securing a right-of-way for the least cost installation of the City's poles, down guys, and aerial conductors. The City will provide tree clearing of the right-of-way. The customer may be asked to clear any other obstacles in the right-of-way. If the customer requests City's facilities at a location other than the least-cost route, the customer will be asked to contribute to the cost of construction. In cases where an overhead service is required and/or mutually agreeable to provide residential service to a customer, the customer will provide the overhead riser, weatherhead, and conductor to meet all building codes and the National Electric Safety Code. The City will provide the meter enclosure and be responsible for making all overhead weatherhead connections and disconnections. See Figure 1.

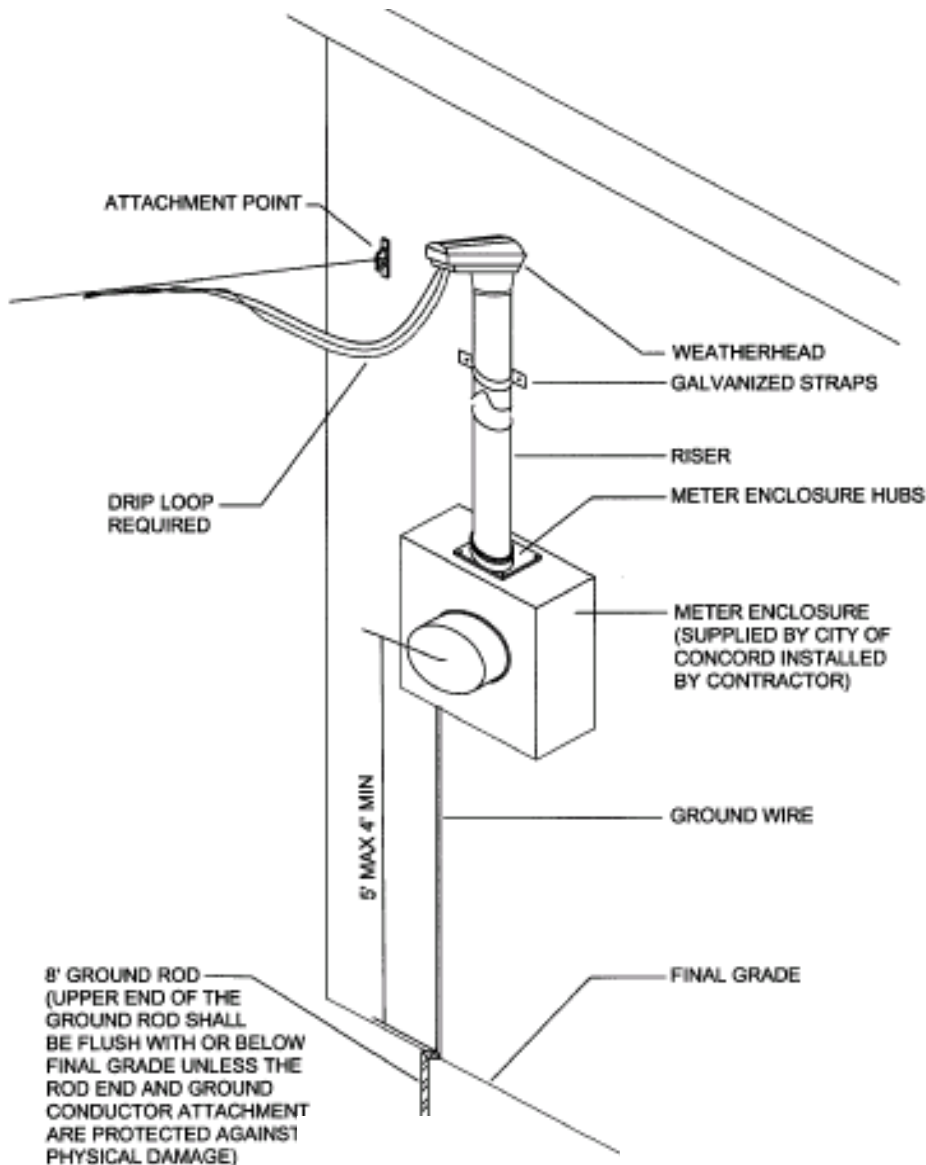


Figure 1: Overhead Service Diagram.

- 2.8. **Underground Installations.** The customer will be responsible for providing a cleared and finished grade within six inches of the planned final grade of the easement. The customer must provide the specific location of all property lines before construction can begin. The City may not be able to provide underground conductors where severe obstacles exist. Where the City encounters obstacles that necessitate construction beyond normal trenching (such as creeks, rock blasting, gullies, walls and other conflicting utilities), the customer will be asked to fund the extra expense. The City

may agree to share its trench with other utilities provided that the customer and other utilities make suitable arrangements to meet the City's construction schedule and safety requirements and agree to finish and tamp the trench to within 95 percent of original compaction. In cases where an underground service is required and/or mutually agreeable to provide residential service to a customer, the City will provide the meter enclosure and underground conduit riser to the meter base. See Figure 2.

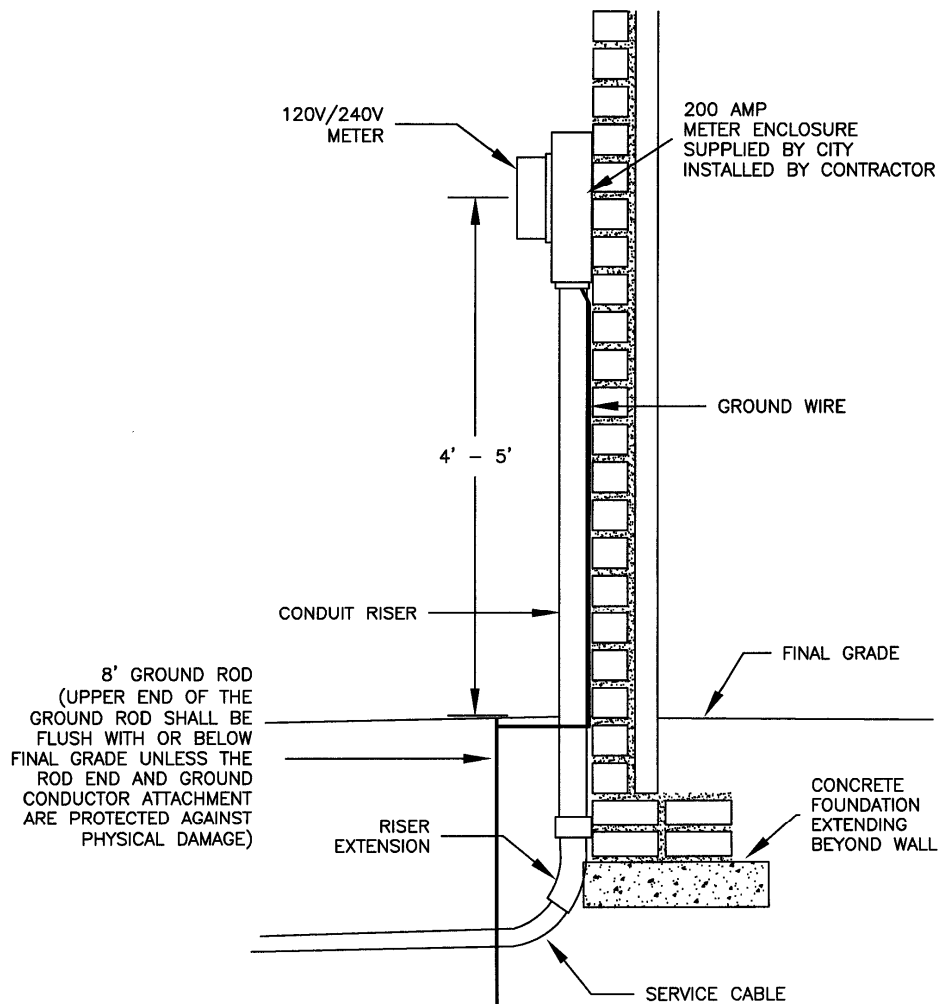


Figure 2: Underground Service Diagram.

- 2.9. **Load.** The customer must inform the City as to the type of voltage and level of service desired. The City will require information concerning total connected load, cycling loads, motor starting loads, and future loads. The City will inform the customer of any service limitations. Only certain voltage classes may be available and across-the-line starting of certain size motors may be limited. Restrictions on certain types of electrical loads may be necessary if the load produces spurious noise, ferroresonance, or other sinewave abnormalities on the electric system. The City will inform the customer of the maximum level of available fault current (short-circuit current) that the customer's equipment might experience. Likewise, the customer must inform the City of the installation of any fault current (short-circuit current) contribution from customer-owned motors and facilities.
- 2.10 **Applicable Regulations.** In establishing service connections, customers must assist the City in meeting both local building codes and the National Electrical Safety Code. Safe working clearances, personal safety clearances, and safe construction clearances are of special concern.

3.0 Electric Supply

- 3.1. **Frequency.** The City maintains a 60-hertz frequency electric system. Equipment that operates at frequencies other than 60-hertz will not function properly on the City's system.
- 3.2. **Equipment.** The voltage, number of phases, and type of meter that will be supplied depends upon the character, size, and location of the load to be served and upon the City's available facilities. Customers are encouraged to consult with the City's Electric Systems Department before purchasing equipment.
- 3.3. **Standard Voltage.** The City utilizes the American National Standard Utility Voltages C84.1-1982. Available standard secondary voltages include:
- a. Single phase, 3-wire, 120/240 volts
 - b. Three-phase, 120/208 volts
 - c. Three-phase, 240 volts
 - d. Three-phase, 277/480 volts
- 3.4. **Nominal Voltage.** Reference North Carolina Utilities Commission Guidelines, Article 4, Rule R8-17 for nominal voltages that the City either utilizes or allows.

4.0 Three-Phase Service

- 4.1. **Requirements for the Provision of Three-Phase Service.** Three-phase service (at standard City voltages) may be provided if revenues from the proposed electric load are sufficient to justify the additional investment. Otherwise, the customer may be required to cover any anticipated unrecoverable costs (e.g., 20% of the total construction cost). Applicants for three-phase service may be required to execute a written contract before the service is extended.
- 4.2. **Phase Loss Protection.** When three-phase service is provided to any customer, the customer must be responsible for protecting their equipment from loss of phase (single-phasing) or phase imbalance.

5.0 Temporary Servicea

- 5.1. **Requirements for the Provision of Temporary Service.** Temporary service may be provided if the service is limited to a fixed time period and approved by the City.
- 5.2. **Temporary Service for Construction Sites.** Temporary single-phase service, 120/240 volts, may be provided to construction sites that establish a permanent service in accordance with the following:
 - a. The customer requesting temporary service must provide a suitable pole and approved meter loop installed at an agreed upon location. See Figures 3 and 4.
 - b. Temporary service must be located at a site convenient to existing facilities (i.e., equal to or less than 100 feet), or the cost to install and remove facilities may be charged to the customer.
 - c. The customer requesting temporary service must pay a temporary service fee.
 - d. Associated wiring and equipment must be inspected prior to connection.

a N.C. General Statute 160A-333

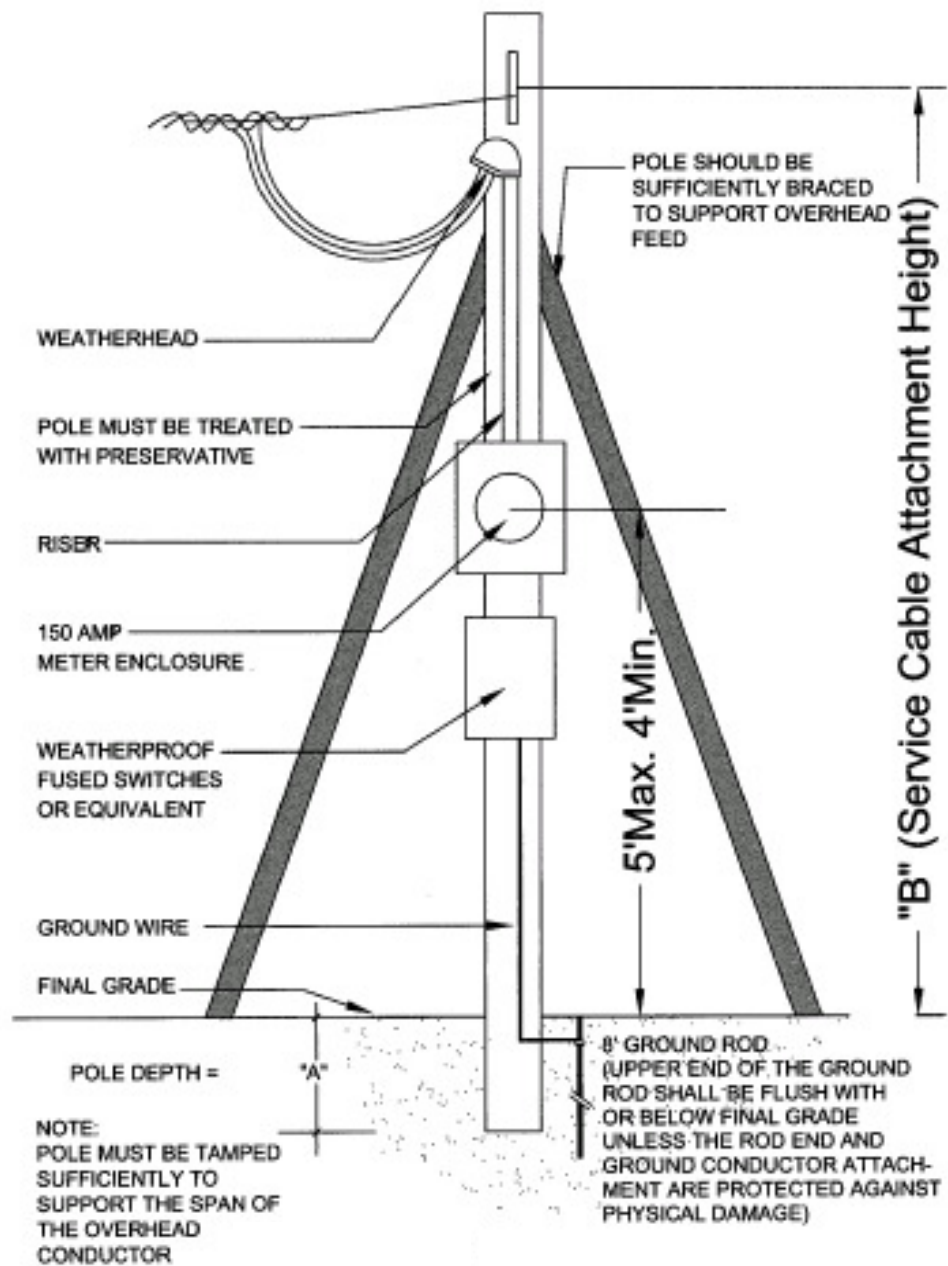
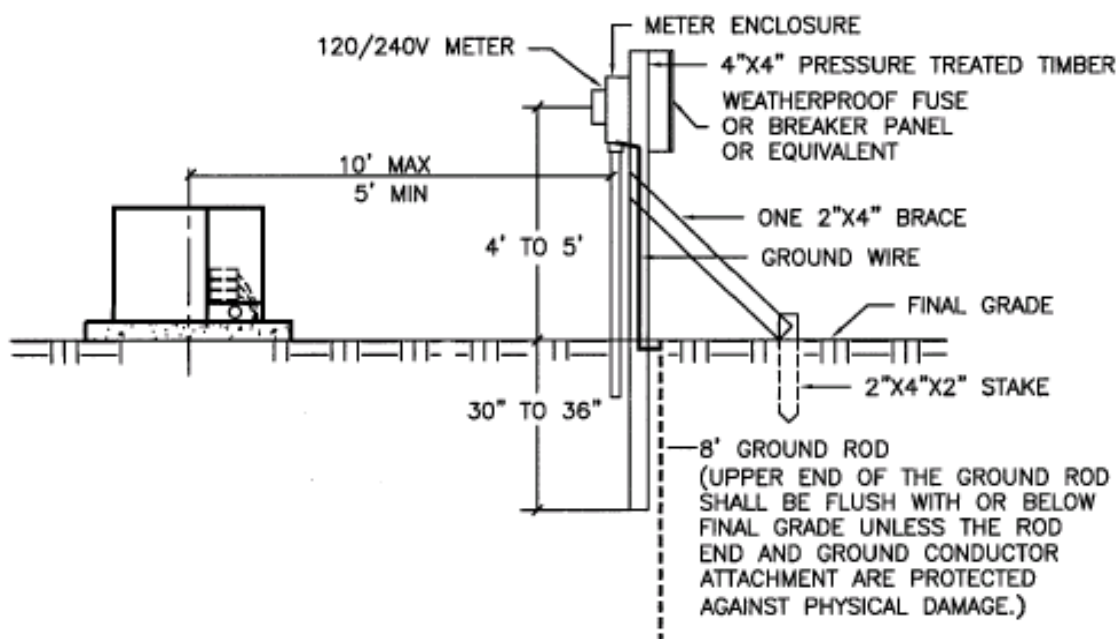


Figure 3: Temporary Overhead Service Diagram.

NOTES:

1. THESE DRAWINGS SHOW A TYPICAL INSTALLATION. ALL INSTALLATIONS SIMILAR OR DISSIMILAR TO THESE INSTALLATIONS MUST BE CHECKED FOR PROPER INSTALLATION BEFORE THE SERVICE CABLE IS INSTALLED.
2. THE DEPTH OF THE POLE SHALL BE VERIFIED.
3. THE POLE SHALL BE PROPERLY TAMPED.



GENERAL

TEMPORARY SERVICE IS AVAILABLE ONLY WITHIN TEN FEET OF AN EXISTING UNDERGROUND TRANSFORMER OR SECONDARY PEDESTAL. TEMPORARY SERVICE SHOULD NOT BE INSTALLED IN THE PATH OF SERVICE BETWEEN TRANSFORMER AND HOUSE. IF TRANSFORMER OR SECONDARY PEDESTAL IS NOT AVAILABLE, REQUEST FOR SERVICE MUST BE COORDINATED WITH THE CITY OF CONCORD ELECTRIC SYSTEMS.

CUSTOMER FURNISHES:

1. THE 4" X 4" PRESSURE TREATED TIMBER, AND BRACE
2. WEATHERPROOF FUSE OR BREAKER BOX
3. GROUND ROD AND GROUND WIRE

CITY OF CONCORD FURNISHES AND INSTALLS:

1. 120/240 VOLT METER
2. TEMPORARY SERVICE CABLE
3. UNDERGROUND RISER CONDUIT
4. METER ENCLOSURE FURNISHED/CUSTOMER INSTALLS

Figure 4: Temporary Underground Service Diagram.

- 5.3. **Temporary Service for Special Events.** Temporary service may be provided if electric service is needed for a short duration or for transient customers (fairs, carnivals, special events) in accordance with the existing rate schedules of the City. Customers must pay in advance for the total estimated cost of installation and the removal of the service facilities, less the salvage value of the material used or the temporary construction cost, whichever is greater. An advance deposit of the full amount of the estimated bill for service may also be required.
- 5.4. **Temporary Service for Recreational or Seasonal Residential Development.** At the request of an owner or developer, overhead distribution primary lines may be installed provided that the customer pays for the construction costs.
- 5.5. **Other Temporary Services.** This classification includes barns, grain bins, water pumps, camp houses, individual seasonal residences, residences of a non-permanent nature and mobile homes, and other similar services that are considered to be of an incidental nature. Single-phase electric service facilities may be extended to establishments of this classification at any location within the service area of the City upon request by the owner or occupant. If the establishment is within 100 feet of an existing primary overhead line, the customer will not be required to contribute to the construction cost.

6.0 Minimum Wiring Requirements

Prior to connecting to the City's electric system, the customer must meet all federal, state, and local requirements for wiring including the National Electrical Safety Code and National Electric Code, in addition to any other relevant codes and safety standards.

7.0 Extra Facilities

- 7.1. **Extra Facilities Charge.** Any time a customer requests that the City provide facilities that are not normally included in the least-cost method of establishing electric service, the City may ask the customer to cover the cost of those additions with an extra facilities charge. The extra facilities charge will be billed upon completion of installation and must be paid upon receipt. Extra facilities can be, but are not limited to: more than one delivery point on a contiguous piece of property, more than one service voltage at a delivery point, extra transformer capacity for across-the-line starting of motors, backup or redundant delivery systems, extra metering features, special poles, switch devices, decorative fences, etc. Extra facilities charges may be added to a customer's monthly billing.
- 7.2. **Determination of Extra Facilities Charge Amount.** The amount of the extra facilities charge will equal the requested installation cost minus the standard installation cost. The installed cost of the extra facilities will be the cost of materials

used, including spare equipment, if any, plus applicable labor, transportation, stores, engineering, and general expense. Costs will be estimated if not known. If a customer has multiple delivery points, extra facilities charges will be calculated based upon the hypothetical cost to meet the customer's electrical needs at one delivery point and at one voltage versus the extra cost in meeting the customer's needs at multiple delivery points or multiple voltages.

- 7.3. **Right to Refuse Requests for Extra Facilities.** The City may refuse requests for extra facilities if, on its determination, the requested facilities are not feasible, or may adversely affect the City's cost or the reliability of the electric system.

8.0 Relocation of Facilities

The City may consider a customer's request to relocate the City's facilities. However, the customer may be asked to bear the expense of the relocation. For any relocation of overhead or underground facilities, the customer's expense will be determined by calculating the total installed cost of the new facility plus removal costs, less any salvage value.

9.0 Equipment Specifications

- 9.1. **9.1 Location.** Customers must meet with a representative of the City to select a potential location for their meter. Electric meters must be located in an area that is accessible to City staff and equipment without the need to encroach on neighboring property. If the side of a structure or obstacles adjacent to the side of a structure are within five feet of the property line, the electric meter must be mounted within five feet of the front of the structure on the side closest to the electric transformer. Double wide and modular homes set up on the customers' property may have meter enclosure mounted on the side of the home.
- 9.2. **Ownership.** All electric transformers, meters, wires, and related appurtenances provided by the City and installed to serve the customer remains property of the City. The customer must maintain wiring and equipment owned by the customer or the City may refuse to connect service or discontinue service.
- 9.3. **Types of Service.** The types of electrical service provided by the City are identified in Table 1. Voltage, phase, and frequency vary across the City's electric system; therefore, equipment that is operational in one location may not be able to operate in another. Before wiring or purchasing specialized equipment, the customer should contact the City and verify the compatibility of the electric system in their location.

Table 1: Types of Service.

Current (amps)	Phase(s)	Wire Location	Meter Type
150	1	Overhead	Individual
200	1	Overhead	Individual
200	1	Underground	Individual
200	3	Overhead	Individual
200	3	Underground	Individual
400	1	Overhead or Underground	Individual
400	3	Overhead or Underground	Individual
200	1	Overhead or Underground	2 Gang
200	1	Overhead or Underground	3 Gang
200	1	Overhead or Underground	4 Gang
200	1	Overhead or Underground	5 Gang
200	1	Overhead or Underground	6 Gang
20			13 Terminal
20			8 Terminal
200		Underground	Mobile Home Pedestal

9.4. **Meter Types.**

- a. *Services rated for 400 amps or less and less than 240 volts.* All electrical services rated for 400 amps or less must be metered with self-contained electric watt-hour meters, unless the Director of Electric Systems approves the use of instrument transformers.
- b. *Services rated for over 400 amps or over 240 volts.* All electrical services rated in excess of 400 amps or voltages in excess of 240 volts must be metered using instrument transformers provided and installed by City.

9.5. **Enclosure Standards.**

- a. *Types.* City-issued electric meter enclosures must be used for all electric meter enclosures for electric services up to 400 amps. Metering equipment for applications greater than 400 amps must be coordinated with the City. All meter sockets must be Underwriters Laboratories listed and labeled as such.

1. Individual Meters.

- (a) *Single Phase.* Meter sockets must be manufactured by Durham or an equivalent manufacturer, rated for 320 amps of continuous current, capable of overhead or underground service line entry, ringless with four jaw-clamping terminals, and equipped with a Landis & Gyr or equivalent block assembly and a lever operated jaw release and bypass.
- (b) *Three Phase.* Meter sockets must be manufactured by Durham or an equivalent manufacturer, rated for 320 amps of continuous current, capable of overhead or underground service line entry, ringless with seven jaw-clamping terminals, and equipped with a Landis & Gyr or equivalent block assembly and a lever operated jaw release and bypass.

- 2. *Gang Meters.* Gang meter requests must be submitted on a “special request multiple metering agreement” and approved by the City’s Director of Electric Systems. Installations must include an appropriately-sized transformer, which will be owned and maintained by the City. The customer will be responsible for the ownership and maintenance of the conduit bank, main disconnect, and meter sockets.

- (a) *Single Phase.* Meter sockets must be equipped with five jaw-clamping terminals, and a lever operated jaw release and bypass.
- (b) *Three Phase.* Meter sockets must be equipped with seven jaw-clamping terminals and a lever operated jaw release and bypass and capable of accommodating watt-hour meters.

- b. *Studs.*

- 1. *Line Side.* Line side studs must be located at the center of the enclosure and equipped with 350 thousand circular millimeter (MCM) single barrel lugs.
- 2. *Load Side.* Load side studs must be equipped with 350 MCM double barrel

lugs.

3. *Neutral.* Neutral studs must have double barrel lugs. An extra triplex grounding lug must be provided for a #6 copper wire.
 - c. *Labels.* All meter enclosures must be properly mounted and, when required, marked prior to the installation of service lines. The meter socket cover must be labeled with ¾-inch white letters on a red background. The label must be located in the center of the cover, two inches from the top. The letters “con” must be stamped or embossed in 1-inch letters on the lower right corner of the lid. Multiple gang (2-6 gang) meter enclosures and individual enclosures that are grouped together, must be identifiably marked with the address served by the meter, prior to the installation of the meters and electrical service line.
 - d. *Height.* The center of all meter enclosures must be four to five feet above final grade.
- 9.6. **Multiple Gang Metering.** All electrical services requiring specialized gang metering must be approved by the City of Concord Electric Systems Department. Such installations must consist of an appropriately sized transformer, which will be owned and maintained by City of Concord. The customer must own and maintain a conduit bank feeding a customer owned and maintained main disconnect that feeds appropriate customer owned and maintained meter sockets. Meter sockets must consist of 5 terminals and lever bypass for single-phase network (120/208 volt) metering and 7 terminals and lever bypass for three-phase metering to accommodate watt-hour meters. Watt-hour meters shall be owned and maintained by the City of Concord. See Figure 5.

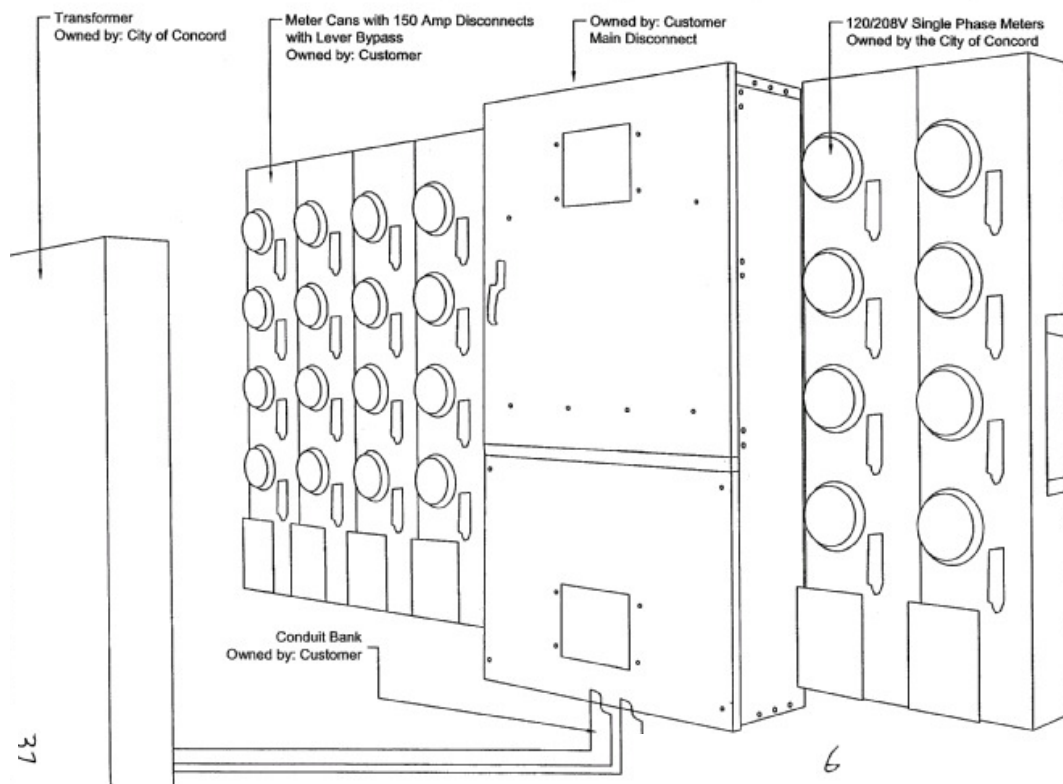


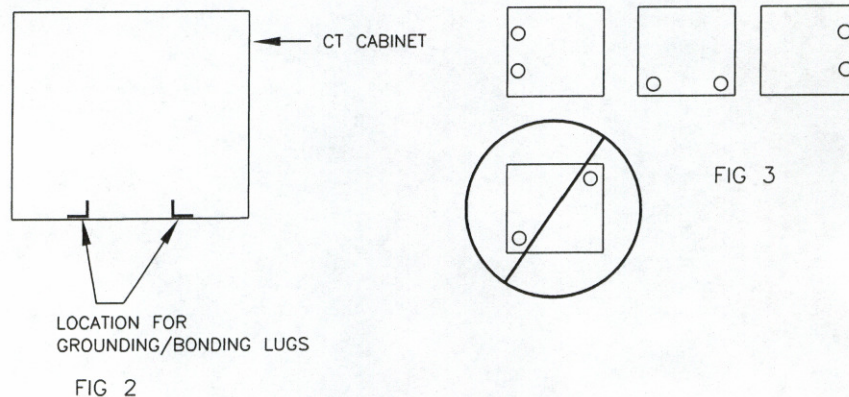
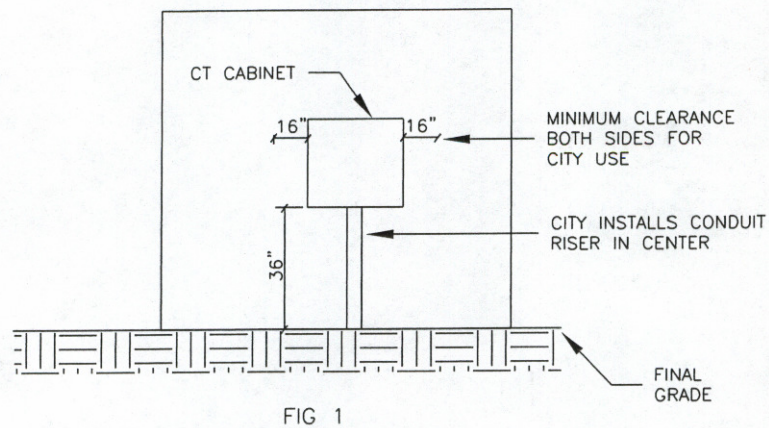
Figure 5: Gang Metering Diagram.

9.7. Current Transformer (CT) Cabinets.

- a. *Size.* City-issued cabinets must be used for all required current transformer cabinets for electric services up to 400 amps.
 1. For 120/240 volt services in excess of 200 amps, a 24-inch by 24-inch by 8-inch enclosure must be used.
 2. For 120/208 volt services in excess of 200 amps, a 30-inch by 30-inch by 8-inch enclosure must be used.
 3. For 277/480 volt services, a 36-inch by 36-inch by 12-inch enclosure must be used.
- b. *Height.* The bottom of all current transformer cabinets must be 36 inches above final grade.
- c. *Side Clearance.* No customer-owned equipment can be mounted within 16 inches of the current transformer cabinet, such as breaker panel, main disconnect, etc. Any equipment mounted within this area must be removed prior to the installation of the electric service line.
- d. *Conduit Risers.* The City will install a main feeder conduit riser to the center of the bottom of the cabinet for underground feeds. The contractor must provide and

install an overhead main feeder conduit riser to the center top of cabinet.

- e. *Bonding Lugs.* Bonding lugs must be provided by the contractor and placed inside the cabinet so as not to interfere with the 4-inch conduit riser mounted in the center of cabinet. See Figures 6 and 7.
- f. *Length of Free Conductors.* The following lengths of free conductors must be provided in the cabinet for termination and makeup:
 - 1. For 24-inch by 24-inch by 8-inch cabinets, 36 inches,
 - 2. For 30-inch by 30-inch by 8-inch cabinets, 36 inches, and
 - 3. For 36-inch by 36-inch by 12-inch cabinets, 48 inches.



CT CAN SHALL BE MOUNTED 36" ABOVE FINAL GRADE MEASURED FROM BOTTOM OF CABINET. SEE FIG 1

NO EQUIPMENT SHOULD BE MOUNTED WITHIN 16" EITHER SIDE OF CT CAN. (SEE FIG 1)

BONDING LUGS SHOULD BE MOUNTED INSIDE BOTTOM SO AS NOT TO INTERFERE WITH 4" CONDUIT RISER MOUNTED IN THE CENTER OF CT CABINET. (SEE FIG 2 AND PAGE 37A)

CUSTOMER LOAD SIDE CONDUCTORS SHOULD ENTER AS PICTURED IN FIG 3

ALL NEC REQUIRED BONDING WILL BE COMPLETED BY CONTRACTOR BEFORE SERVICE WILL BE ENERGIZED. SEE DRAWING PAGE 37A.

IF ANY UNUSUAL CIRCUMSTANCES EXIST PLEASE CONTACT ELECTRIC SYSTEMS CITY OF CONCORD (704)920-5316 OR (704)920-5317

Figure 6: Current Transformer Cabinet Installation Diagram.

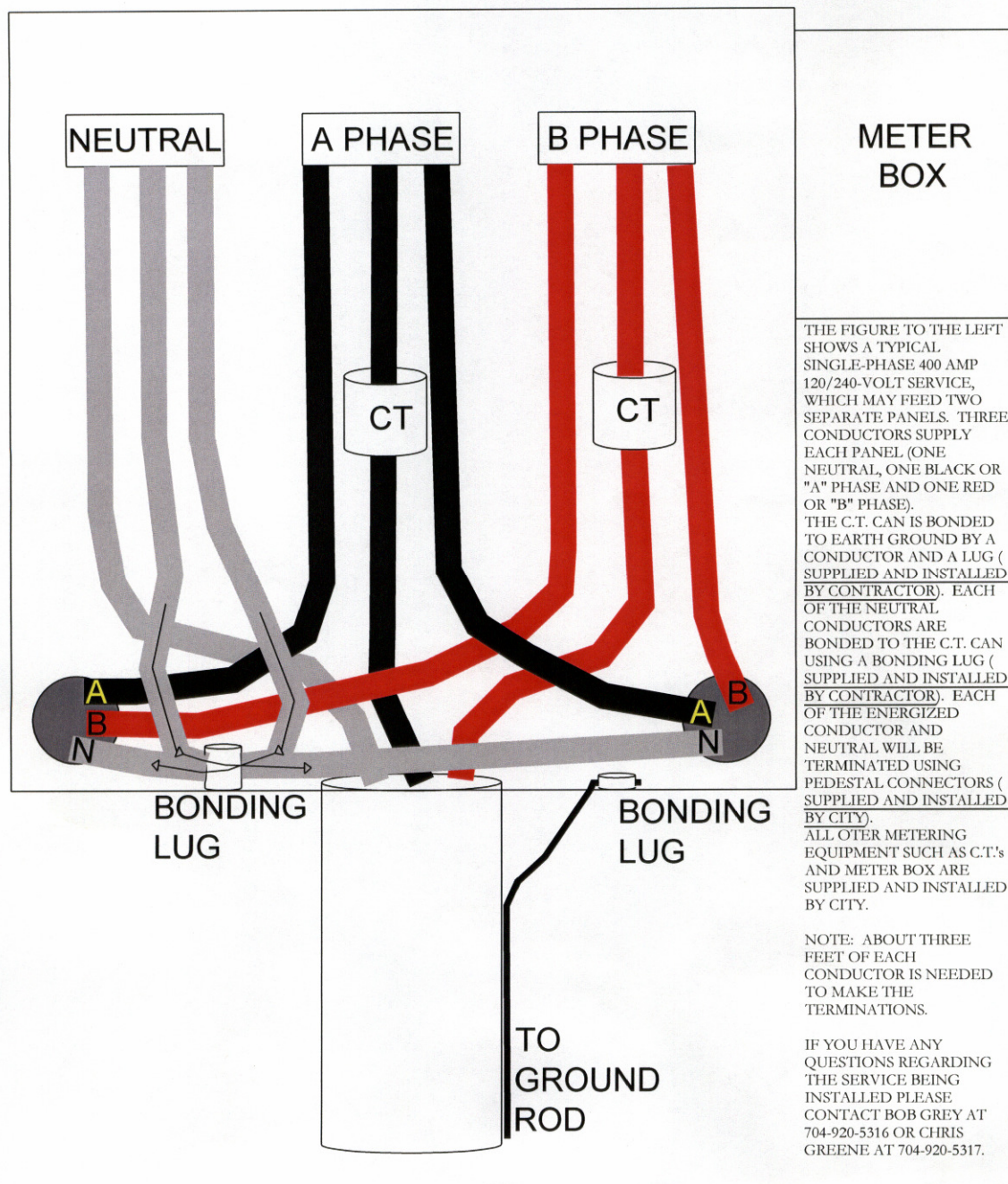


Figure 7: Typical CT Can Diagram.

10.0 Metering

- 10.1. **Requirement for the Initiation of Electric Service.** A certificate of occupancy as issued by an appropriate authority, must be obtained before electric service will be initiated.
- 10.2. **Residential Metering.** All residential electrical services in the City must be individually metered. Meter locations at duplexes and apartments should be ganged into one central location. Master metering of electric service is prohibited or restricted under the provisions of the federal Public Utilities Regulatory Policies Act of 1978 and N.C. General Statute 143-151.42.
- 10.3. **Mobile Home Metering.** Mobile home meter applications must consist of a mobile home “pedestal” provided by the City, which includes the customer meter enclosure and a main disconnect breaker. The customer must reimburse the City for the cost of the pedestal.
- 10.4. **Requests for Electric Meter Testing.** Electric meters are highly accurate instruments of measurement with expected life spans that exceed 40 years. In very few circumstances these meters measure incorrectly. A customer requesting a meter test should contact the Customer Service Department.
- 10.5. **Electric Meter Testing Charge.** An electric meter will be tested free of charge, once in a twelve month period at the request of the customer. If testing is requested more frequently than once in twelve months, the City will require the customer pay a charge based on the cost incurred by the City. If the meter test shows the meter to be inaccurate (plus or minus 2 percent), the meter may be adjusted.
- 10.6. **Meter Reading Schedule.** The City’s meters will be read by City employees according to the City's schedule. Reading dates will vary slightly from month-to-month due to weekends, City holidays, weather conditions, and other factors. Monthly billing periods will be assumed to be 30 days.
- 10.7. **Meter Reading Errors.** The City’s meter readers use modern meter reading equipment and techniques. If meter reading corrections are necessary, the City will promptly make them. A credit due a customer from a meter reading error will be posted to the customer's account or a check may be written to the customer, if requested.
- 10.8. **Associated Regulations.** The City’s meter reading policy adheres to North Carolina Utilities Commission Rule Article 2, R8-8.

11.0 Line Extensions

- 11.1. **Standards.** The City strives to design, install, operate, and maintain the electric distribution system in compliance with good engineering and operating practices that are safe and economically feasible for the City.
- 11.2. **Deviations from the Least-Cost Method.** If the City's preferred method of service is not acceptable, the customer may pay a non-refundable contribution for the extra cost of providing and maintaining service by an acceptable alternate method. The cost to the customer will be for any amount that exceeds the cost of the City's initial, preferred method. The customer's preferred method will need to meet the qualifications of good engineering and operating practices.
- 11.3. **Associated Regulations.** Line extensions are made in accordance with North Carolina General Statute 160A-331 and 160A-332.

12.0 Overhead Line Extensions

- 12.1. **Overhead Extension Classifications.** Applications for electric service will be classified into one of the following defined classifications, and overhead service will be extended accordingly: permanent/non-seasonal residences, modular homes, and permanent establishments other than residences.
- 12.2. **Extensions to Permanent/Non-Seasonal Residences.** This classification includes permanent non-seasonal residences, including mobile homes, apartments, and condominiums that are of a permanent nature and require electric service on a regular basis. Single-phase electric service facilities will be extended to establishments of this classification at any premises within the service area of the City upon request of the owner or occupant. No contribution in aid of construction will be required if the City's standards for extending service are met.
- 12.3. **Extensions to Modular Homes.** Modular homes will be considered a permanent residence, and service will be extended provided that:
 - a. The modular home is on a permanent foundation with the wheels and axles removed; AND
 - b. The applicant for service can provide evidence of ownership of the property on which the modular home is located; AND
 - c. The applicant for service can provide evidence of ownership of the home; AND
 - d. The home is to be used as a permanent dwelling by the applicant for service rather than a weekend or summer cottage type dwelling; OR
 - e. The home is located in mobile home park served with permanent water and sewer

facilities and approved by the zoning authority in which it is located.

12.4. Extensions to Permanent Establishments Other than Residences.

This classification includes schools, public buildings, churches, commercial and industrial establishments, controlled environment livestock and poultry housing, or any other establishments determined by the City to be of a permanent nature, requiring electric service on a continuous basis. Single-phase electric service facilities will be extended to establishments of this classification at any premises within the service area of the City upon request by the owner or occupant. No contribution in aid of construction will be required if the City's standards for extending service are met.

13.0 Underground Line Extension

- 13.1. **Requirements for the Provision of Underground Service.** The City may extend underground service, upon request, to its customers. If the installation of underground facilities is, in the opinion of the City, more feasible than the installation of overhead facilities, the customer may receive a credit for their portion of the construction costs.
- 13.2. **Underground Service to New Development.** At the request of an owner or developer, the City may install underground distribution facilities to provide service to single residences, apartment houses, condominiums, and new developments where no overhead primary service exists. A fee per foot of service lateral may be required of the owner or developer. Incidental loads such as water pumps, swimming pools, club houses, etc., will be considered individual services. However, the total cost of a special three-phase service to any incidental loads will be charged. Refer to Section 7.0 for information about delivery points that are not consistent with the least-cost approach.
- 13.3. **Areas with Existing Overhead Primary.** At the request of an owner or developer, the City may furnish and install underground primary lines and service laterals in areas already being serviced with existing overhead primary service if the owner or developer agrees to contribute to the construction cost. The conversion of overhead to underground will be at the discretion of the City's Director of Electric Systems.
- 13.4. **Conversion of Service Drops.** At the request of an owner, the City may replace existing overhead service drops with underground service, in accordance with the following terms and conditions:
 - a. The owner may be required to pay a non-refundable charge to remove the existing overhead service; AND
 - b. In addition to the removal charge, the owner may be required to pay an installation charge; AND
 - c. It is the customer's responsibility to accommodate the underground service drop; AND

- d. Where the City's existing overhead facilities are no longer adequate, new underground service may be installed at no cost to the customer.

13.5. Underground Service to Recreational or Seasonal Residential Development.

- a. A contribution to the construction cost may be required.
 - b. The City may furnish and install the transformers, transformer enclosure, primary cable and terminators, primary bus, connectors (including those for secondary), and metering.
 - c. The owner or developer must provide and install all duct and cable for secondary service from the secondary terminals of the transformers or CT cabinet to the service entrance equipment. The owner or developer may be required to provide and/or install the transformer pad, the duct for the primary cable from the pad to the origin of the underground run, and a conduit from the pad to the nearest location appropriate for the installation of a meter. The owner or developer may be responsible for providing and installing cable terminations and splicing in troughs, current transformer cabinets, transformer pads or other junctions.
 - d. All work by both parties will be performed in accordance with the City's technical standards.
- 13.6. Excess Installation Costs.** Where, due to rock conditions in the soil, the trenching work cannot be accomplished by use of standard trenching machines, any excess cost caused by these conditions shall be charged by the City to the owner or developer. Where there are other unusual conditions, such as high water table, which require installation procedures not normally used, the excess cost of those procedures may be charged to the owner or developer. The cost of cutting through and replacing pavement within the development shall be at the owner's or developer's expense.
- 13.7. Removal of Temporary Overhead Facilities.** The owner or developer shall reimburse the City for the cost of installing and removing any temporary overhead facilities installed at the owner's or developer's request.
- 13.8. Easement.** The owner or developer will furnish, without cost to the City, necessary easements and rights-of-way and will be required to initially cut and clear those easements. The owner or developer will be required to have the rights-of-way and all streets, alleys, sidewalks, and driveway entrances graded to final grade, and finalize lot lines before the construction of the electrical distribution system begins.
- 13.9. Deviations from the Least-Cost Method.** The type of construction and the location of the facilities will be at the option of the City. If the owner or developer desires changes in either location or type of construction, the installations will be made only when the owner or developer pays the City the estimated additional cost incurred.
- 13.10. Transformer Type and Location.** The City will have the option of placing transformers above ground, on pads of its specification or design, or underground in

enclosures of its specifications or design. The City will determine the practicality of placement.

- 13.11. **Vegetation.** Shrubs and trees requiring protection during the installation of the underground service will be the responsibility of the owner or developer, and the owner or developer will hold the City and its sub-contractors harmless against any claims for damage. It will be the responsibility of the owner or developer to re-seed and/or maintain the trench cover. In areas where the work is the City's responsibility, the City will take responsibility for re-seeding with common varieties and strawing grassy areas.

14.0 Renewable Energy Generator Interconnections

14.1. General Requirements.

a. *Applicability.*

1. This Standard contains the requirements, in addition to applicable tariffs and service regulations, for the interconnection and parallel operation of Generating Facilities with the City of Concord, North Carolina.
 - (a) A request to interconnect a certified inverter-based Generating Facility no larger than 20 kW for Residential and no larger than 100 kW for Non-Residential shall be evaluated under Section 2 Small Inverter Process. (See Attachments 3 and 4 for certification criteria.)
 - (b) A request to interconnect a certified Generating Facility no larger than 2 MW shall be evaluated under the Section 3 Fast Track Process. (See Attachments 3 and 4 for certification criteria.)
 - (c) A request to interconnect a Generating Facility larger than 2 MW, or a Generating Facility that does not pass the Fast Track Process or the Small Inverter Process, shall be evaluated under Section 4 Study Process.
2. Capitalized terms used herein shall have the meanings specified in the Glossary of Terms in Attachment 1 or the body of these procedures.
3. This Standard shall not apply to Generating Facilities already interconnected or approved for interconnection as of the effective date of this Standard, unless so agreed to by the City and the Interconnection Customer. However, this Standard shall apply if the Interconnection Customer proposes Material Modifications or transfers ownership of the Generating Facility after such date.
4. Prior to submitting its Interconnection Request, the Interconnection Customer may ask the City's interconnection contact employee or office whether the proposed interconnection is subject to these procedures.
5. Infrastructure security of electric system equipment and operations and control hardware and software is essential to ensure day-to-day reliability and

operational security. All Utilities are expected to meet basic standards for electric system infrastructure and operational security, including physical, operational, and cyber-security practices.

6. References in these procedures to Interconnection Agreement are to the City of Concord Interconnection Agreement. (See Attachment 9.)
- b. *Pre-Request.* The City shall designate an employee or office from which information on the application process and on an Affected System can be obtained through informal requests from the Interconnection Customer presenting a proposed project for a specific site. The name, telephone number, and e-mail address of such contact employee or office shall be made available on the City's Internet web site. Electric system information provided to the Interconnection Customer should include relevant system studies, interconnection studies, and other materials useful to an understanding of an interconnection at a particular point on the City's System, to the extent such provision does not violate confidentiality provisions of prior agreements or critical infrastructure requirements. The City shall comply with reasonable requests for such information.
- c. *Interconnection Request.* The Interconnection Customer shall submit its Interconnection Request to the City, together with the non-refundable processing fee or deposit specified in the Interconnection Request. The Interconnection Request shall be date- and time-stamped upon receipt. The original date- and time-stamp applied to the Interconnection Request at the time of its original submission shall be accepted as the qualifying date- and time-stamp for the purposes of any timetable in these procedures. The City shall notify the Interconnection Customer within fifteen Business Days of the receipt of the Interconnection Request as to whether the Interconnection Request is complete or incomplete. If the Interconnection Request is incomplete, the City shall provide, along with notice that the Interconnection Request is incomplete, a written list detailing all information that must be provided to complete the Interconnection Request. The Interconnection Customer will have ten Business Days after receipt of the notice to submit the listed information or to request an extension of time to provide such information. If the Interconnection Customer does not provide the listed information or a request for an extension of time within the deadline, the Interconnection Request will be deemed withdrawn. An Interconnection Request will be deemed complete upon submission of the listed information to the City.
- d. *Modification of the Interconnection Request.* Any Material Modification not agreed to in writing by the City and the Interconnection Customer may be deemed a withdrawal of the Interconnection Request and may require submission of a new Interconnection Request, unless proper notification of each Party by the other and a reasonable time to cure the problems created by the changes are undertaken.
- e. *Site Control.* Documentation of site control is not required to be submitted with the Interconnection Request. However, the City may request a demonstration of site control if two or more proposed Generating Facilities are competing for capacity on the same circuit. The Interconnection Customer that can demonstrate site control

will have higher Queue Position than one that is on the same circuit. The Interconnection Customer must submit documentation of site control to the City at or before the time of execution of the Interconnection Agreement. Site control may be demonstrated through:

1. Ownership of, a leasehold interest in, or a right to develop a site for the purpose of constructing the Generating Facility;
 2. An option to purchase or acquire a leasehold site for such purpose; or
 3. An exclusivity or other business relationship between the Interconnection Customer and the entity having the right to sell, lease, or grant the Interconnection Customer the right to possess or occupy a site for such purpose.
- f. *Queue Position.* The City shall assign a Queue Position based upon the date- and time-stamp of the Interconnection Request. The Queue Position of each Interconnection Request will be used to determine the cost responsibility for the Upgrades necessary to accommodate the interconnection. At the City's option, Interconnection Requests may be studied serially or in clusters for the purpose of the System Impact Study, should one be required. (See Section 4.4.)
- g. *Interconnection Requests Submitted Prior to the Effective Date of these Procedures.* Nothing in this Standard affects an Interconnection Customer's Queue Position assigned before the effective date of these procedures. The Parties agree to complete work on any interconnection study agreement executed prior to the effective date of these procedures in accordance with the terms and conditions of that interconnection study agreement. Any new studies or other additional work will be completed pursuant to this Standard.

14.2. Optional Small Inverter Process for Certified Inverter-Based Generating Facilities No Larger than 20 kW Residential or 100 kW for Non-Residential

- a. *Applicability.* The Small Inverter Process is available to an Interconnection Customer proposing to interconnect its inverter-based Generating Facility with the City's System if the Generating Facility is no larger than 20 kW for Residential or no larger than 100 kW for Non-Residential and if the Interconnection Customer's proposed Generating Facility meets the codes, standards, and certification requirements of Attachments 3 and 4 of these procedures, or the City has reviewed the design or tested the proposed Generating Facility and is satisfied that it is safe to operate.
- b. *Interconnection Request.* The Interconnection Customer shall complete the Interconnection Request for a certified Small inverter-based Generating Facility (see Attachment 5) and submit it to the City, together with the non-refundable processing fee specified in the Interconnection Request.
1. The City shall evaluate the Interconnection Request for completeness and notify the Interconnection Customer within fifteen Business Days of receipt as to whether the Interconnection Request is complete or incomplete and, if incomplete, advise the Interconnection Customer what material is missing.

2. The City shall verify that the Generating Facility can be interconnected safely and reliably using the screens contained in the Fast Track Process. (See Section 3.2.1.) Unless the City determines and demonstrates that the Generating Facility cannot be interconnected safely and reliably, the City shall approve the Interconnection Request and return it to the Interconnection Customer.

c. *Certificate of Completion.*

1. After installation of the Generating Facility, the Interconnection Customer shall return the Certificate of Completion to the City. (See Attachment 5.) Prior to parallel operation, the City may inspect the Generating Facility for compliance with standards which may include a witness test, and may schedule appropriate metering replacement, if necessary.
 2. The City shall notify the Interconnection Customer in writing that interconnection of the Generating Facility is authorized. If the witness test is not satisfactory, the City has the right to disconnect the Generating Facility. The Interconnection Customer has no right to operate in parallel with the City until a witness test has been performed, or waived on the Interconnection Request. Upon receipt of the Certificate of Completion the City and the Interconnection Customer shall agree on a reasonable time frame for the City to complete the witness test.
 3. Interconnection and parallel operation of the Generating Facility is subject to the Terms and Conditions stated in Attachment 5 of these procedures.
- d. *Contact Information.* The Interconnection Customer must provide the contact information for the legal applicant (i.e., the Interconnection Customer). If another entity is responsible for interfacing with the City, that contact information must also be provided on the Interconnection Request.
- e. *Ownership Information.* The Interconnection Customer shall provide the legal name(s) of the owner(s) of the Generating Facility.
- f. *UL 1741 Listed.* The Underwriters' Laboratories (UL) 1741 standard (Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources) addresses the electrical interconnection design of various forms of generating equipment. Many manufacturers submit their equipment to a nationally recognized testing laboratory that verifies compliance with UL 1741. This "listing" is then marked on the equipment and supporting documentation.

14.3. Optional Fast Track Process for Certified Generating Facilities No Larger than 2 MW

- a. *Applicability.* The Fast Track Process is available to an Interconnection Customer proposing to interconnect its Generating Facility with the City's System if the Generating Facility is no larger than 2 MW and if the Interconnection Customer's proposed Generating Facility meets the codes, standards, and certification

requirements of Attachments 3 and 4 of these procedures, or the City has reviewed the design or tested the proposed Generating Facility and is satisfied that it is safe to operate.

- b. *Initial Review.* The City shall perform an initial review using the screens set forth below, shall notify the Interconnection Customer of the results, and include with the notification copies of the analysis and data underlying the City's determinations under the screens.

1. Screens:

- (a) The proposed Generating Facility's Point of Interconnection must be on a portion of the City's Distribution System.
- (b) For interconnection of a proposed Generating Facility to a radial distribution circuit, the aggregated generation, including the proposed Generating Facility, on the circuit shall not exceed 15% of the line section annual peak load as most recently measured at the substation. A line section is that portion of a City's System connected to a customer bounded by automatic sectionalizing devices or the end of the distribution line.
- (c) For interconnection of a proposed Generating Facility to the load side of spot network protectors, the proposed Generating Facility must utilize an inverter-based equipment package and, together with the aggregated other inverter-based generation, shall not exceed the smaller of 5% of a spot network's maximum load or 50 kW.b
- (d) The proposed Generating Facility, in aggregation with other generation on the distribution circuit, shall not contribute more than 10% to the distribution circuit's maximum fault current at the point on the high voltage (primary) level nearest the proposed point of change of ownership.
- (e) The proposed Generating Facility, in aggregate with other generation on the distribution circuit, shall not cause any distribution protective devices and equipment (including, but not limited to, substation breakers, fuse cutouts, and line reclosers), or Interconnection Customer equipment on the system to exceed 87.5% of the short circuit interrupting capability; nor shall the interconnection be proposed for a circuit that already exceeds 87.5% of the short circuit interrupting capability.
- (f) Using the table below, determine the type of interconnection to a primary distribution line. This screen includes a review of the type of electrical service provided to the Interconnection Customer, including line configuration and the transformer connection to limit the potential for creating over-voltages on the City's System due to a loss of ground

b. A spot network is a type of distribution system found within modern commercial buildings to provide high reliability of service to a single customer. (Standard Handbook for Electrical Engineers, 11th edition, Donald Fink, McGraw Hill Book Company.)

during the operating time of any anti-islanding function.

Primary Distribution Line Type	Type of Interconnection to Primary Distribution Line	Result/Criteria
Three-phase, three wire	Three-phase or single-phase, phase-to-phase	Pass screen
Three-phase, four wire	Effectively-grounded three-phase or single-phase, line-to-neutral	Pass screen

- (g) If the proposed Generating Facility is to be interconnected on single-phase shared secondary, the aggregate generation capacity on the shared secondary, including the proposed Generating Facility, shall not exceed 20 kW.
 - (h) If the proposed Generating Facility is single-phase and is to be interconnected on a center tap neutral of a 240 volt service, its addition shall not create an imbalance between the two sides of the 240 volt service of more than 20% of the nameplate rating of the service transformer.
 - (i) The proposed Generating Facility shall not cause voltage distortions at the Point of Interconnection to the City-Owned facilities to exceed 3% of nominal 60 Hertz voltage.
 - (j) No construction of facilities by the City on its own System shall be required to accommodate the Generating Facility.
2. If the proposed interconnection passes the screens, the Interconnection Request shall be approved and the City will provide the Interconnection Customer an executable Interconnection Agreement within ten Business Days after the determination.
 3. If the proposed interconnection fails the screens, but the City determines that the Generating Facility may nevertheless be interconnected consistent with safety, reliability, and power quality standards, the City shall provide the Interconnection Customer an executable Interconnection Agreement within five Business Days after the determination.
 4. If the proposed interconnection fails the screens, but the City does not or cannot determine from the initial review that the Generating Facility may nevertheless be interconnected consistent with safety, reliability, and power quality standards unless the Interconnection Customer is willing to consider minor modifications or further study, the City shall provide the Interconnection Customer with the opportunity to attend a customer options meeting.

5. City reserves the right to accept or reject any Interconnection Request that would negatively impact existing customers as determined by the City.
- c. *Customer Options Meeting.* Regardless of which process the Interconnection Request falls under (Small Inverter, Fast Track, or Study Process), if the City determines the Interconnection Request cannot be approved without minor modifications at minimal cost; or a supplemental study or other additional studies or actions; or at significant cost to address safety, reliability, or power quality problems, the City shall notify the Interconnection Customer and provide copies of all data and analyses underlying its conclusion. The City shall offer to convene a customer options meeting to review possible Interconnection Customer facility modifications or the screen analysis and related results, to determine what further steps are needed to permit the Generating Facility to be connected safely and reliably. At the time of notification of the City's determination, or at the customer options meeting, the City shall:
1. Offer to perform facility modifications or minor modifications to the City's System (e.g., changing meters, fuses, relay settings) and provide a non-binding good faith estimate of the limited cost to make such modifications to the City's System; or
 2. Offer to continue evaluating the Interconnection Request under the Section 4 Study Process. The Study Process is required for all proposed Generating Facilities 2 MW and larger.

14.4. Study Process

- a. *Applicability.* The Study Process shall be used by an Interconnection Customer proposing to interconnect its Generating Facility with the City's System if the Generating Facility is larger than 2 MW, is not certified, or is certified but did not pass the Fast Track Process or the Small Inverter Process.
- b. *Scoping Meeting.*
1. A scoping meeting will be held within fifteen Business Days after the Interconnection Request is deemed complete, or as otherwise mutually agreed to by the Parties. The City and the Interconnection Customer will bring to the meeting personnel, including system engineers and other resources as may be reasonably required to accomplish the purpose of the meeting. The scoping meeting may be omitted by mutual agreement.
 2. The purpose of the scoping meeting is to discuss the Interconnection Request and review existing studies relevant to the Interconnection Request. The Parties shall further discuss whether the City should perform a Feasibility Study or proceed directly to a System Impact Study, a Facilities Study, or an Interconnection Agreement.
 3. If the Parties agree that a Feasibility Study should be performed, the City shall provide the Interconnection Customer, as soon as possible, after the scoping meeting, a Feasibility Study Agreement (Attachment 6), including an outline of the scope of the study and a non-binding good faith estimate of the cost to

perform the study.

4. If the Parties agree not to perform a Feasibility Study, but to proceed directly to a System Impact Study or Facilities Study, the City shall provide the Interconnection Customer, either a System Impact Study Agreement (Attachment 7) or a Facilities Study Agreement (Attachment 8), as appropriate, including an outline of the scope of the study and a non-binding good faith estimate of the cost to perform the study in a time frame mutually agreed upon by the Parties in the scoping meeting.
5. If the Parties agree not to perform a Feasibility Study, but to proceed directly to an Interconnection Agreement, the City shall provide the Interconnection Customer an executable Interconnection Agreement in a time frame mutually agreed upon by the Parties in the Scoping meeting.

c. *Feasibility Study*

1. The Feasibility Study shall identify any potential adverse system impacts that would result from the interconnection of the Generating Facility.
2. In order to remain in consideration for interconnection, the Interconnection Customer must return the executed Feasibility Study Agreement within 15 Business Days.
3. A deposit of the good faith estimated Feasibility Study costs or earnest money of \$1,000 may be required from the Interconnection Customer.
4. The scope of and cost responsibilities for the Feasibility Study are described in the Feasibility Study Agreement.
5. If the Feasibility Study shows no potential for adverse system impacts, the City shall send the Interconnection Customer within fifteen Business Days a Facilities Study Agreement, including an outline of the scope of the study and a non-binding good faith estimate of the cost to perform the study. If a Facilities Study is not required, the City shall send the Interconnection Customer an executable Interconnection Agreement within fifteen Business Days.
6. If the Feasibility Study shows the potential for adverse system impacts, the review process shall proceed to the appropriate System Impact Studies.

d. *System Impact Studies.*

1. The System Impact Studies shall identify and detail the electric system impacts that would result if the proposed Generating Facility were interconnected without project modifications or electric system modifications, focusing on the adverse system impacts identified in the Feasibility Study, or to study potential impacts, including, but not limited to, those identified in the scoping meeting. The System Impact Studies shall evaluate the impact of the proposed interconnection on the reliability of the electric system.
2. If potential adverse Distribution System impacts are identified in the scoping

meeting or shown in the Feasibility Study, a Distribution System Impact Study must be performed. The City shall send the Interconnection Customer a Distribution System Impact Study Agreement within fifteen Business Days of transmittal of the Feasibility Study or the scoping meeting if no Feasibility Study is to be performed, including an outline of the scope of the study and a non-binding good faith estimate of the cost to perform the study.

3. If potential adverse Transmission System impacts are identified in the scoping meeting or shown in the Feasibility Study or Distribution System Impact Study, a Transmission System Impact Study must be performed. The City shall send the Interconnection Customer a Transmission System Impact Study Agreement within fifteen Business Days of transmittal of the Feasibility Study or Distribution System Impact Study or the scoping meeting if no Feasibility Study or Distribution System Impact Study is to be performed, including an outline of the scope of the study and a non-binding good faith estimate of the cost to perform the study.
4. In order to remain under consideration for interconnection, the Interconnection Customer must return an executed System Impact Study Agreement within 30 Business Days.
5. A deposit of the good faith estimated cost of a Distribution System Impact Study and one half of the good faith estimated cost of a Transmission System Impact Study may be required from the Interconnection Customer.
6. The scope of and cost responsibilities for a System Impact Study are described in the System Impact Study Agreement.
7. If the System Impact Studies show no potential for adverse system impacts, the City shall send the Interconnection Customer within five Business Days a Facilities Study Agreement, including an outline of the scope of the study and a non-binding good faith estimate of the cost to perform the study. If no additional facilities are required, the City shall send the Interconnection Customer an executable Interconnection Agreement within fifteen Business Days.

e. *Facilities Study.*

1. The Facilities Study shall specify and estimate the cost of the equipment, engineering, procurement and construction work (including overheads) needed to implement the conclusions of Feasibility Study and/or System Impact Studies and to allow the Generating Facility to be interconnected and operated safely and reliably.
2. The City shall design any required Interconnection Facilities and/or Upgrades under the Facilities Study Agreement. The City may contract with consultants to perform activities required under the Facilities Study Agreement. The Interconnection Customer and the City may agree to allow the Interconnection Customer to separately arrange for the design of some of the Interconnection Facilities. In such cases, facilities design will be reviewed and/or modified prior to acceptance by the City, under the provisions of the Facilities Study

Agreement. If the Parties agree to separately arrange for design and construction, and provided security and confidentiality requirements can be met, the City shall make sufficient information available to the Interconnection Customer in accordance with confidentiality and critical infrastructure requirements to permit the Interconnection Customer to obtain an independent design and cost estimate for any necessary facilities.

3. In order to remain under consideration for interconnection, or, as appropriate, in the City's interconnection queue, the Interconnection Customer must return the executed Facilities Study Agreement or a request for an extension of time within 30 Business Days.
4. A deposit of the good faith estimated costs for the Facilities Study may be required from the Interconnection Customer.
5. The scope of and cost responsibilities for the Facilities Study are described in the Facilities Study Agreement.
6. Upon completion of the Facilities Study, and with the agreement of the Interconnection Customer to pay for Interconnection Facilities and Upgrades identified in the Facilities Study, the City shall provide the Interconnection Customer an executable Interconnection Agreement within fifteen Business Days.

14.5. Provisions that Apply to All Interconnection Requests

- a. *Reasonable Efforts.* The City shall make reasonable efforts to meet all time frames provided in these procedures unless the City and the Interconnection Customer agree to a different schedule. If the City cannot meet a deadline provided herein, it shall notify the Interconnection Customer, explain the reason for the failure to meet the deadline, and provide an estimated time by which it will complete the applicable interconnection procedure in the process.
- b. *Disputes.*
 1. The Parties agree to attempt to resolve all disputes arising out of the interconnection process according to the provisions of this section.
 2. In the event of a dispute, either Party shall provide the other Party with a written Notice of Dispute. Such Notice shall describe in detail the nature of the dispute.
 3. Each Party agrees to conduct all negotiations in good faith.
- c. *Interconnection Metering.* Any metering necessitated by the use of the Generating Facility shall be installed at the Interconnection Customer's expense in accordance with all applicable regulatory requirements or the City's specifications.
- d. *Commissioning.* Commissioning tests of the Interconnection Customer's installed equipment shall be performed pursuant to applicable codes and standards. The City must be given at least fifteen Business Days written notice, or as otherwise mutually agreed to by the Parties, of the tests and may be present to witness the

commissioning tests.

e. *Confidentiality.*

1. Confidential Information shall mean any confidential and/or proprietary information provided by one Party to the other Party that meets the requirements of the North Carolina Public Records Laws including but not limited to N.C.G.S. Sec. 132-1.2.
2. Confidential Information does not include information previously in the public domain, required to be publicly submitted or divulged by Governmental Authorities, or necessary to be divulged in an action to enforce these procedures. Each Party receiving Confidential Information shall hold such information in confidence and shall not disclose it to any third party nor to the public without the prior written authorization from the Party providing that information, except to fulfill obligations under these procedures, or to fulfill legal or regulatory requirements.
 - (a) *Each Party shall employ at least the same standard of care to protect Confidential Information obtained from the other Party as it employs to protect its own Confidential Information.*
 - (b) *Each Party is entitled to equitable relief, by injunction or otherwise, to enforce its rights under this provision to prevent the release of Confidential Information without bond or proof of damages, and may seek other remedies available at law or in equity for breach of this provision.*
3. If information is requested by the Commission from one of the Parties that is otherwise required to be maintained in confidence pursuant to these procedures, the Party shall provide the requested information to the Commission within the time provided for in the request for information. In providing the information to the Commission, the Party may request that the information be treated as confidential and non-public in accordance with North Carolina law and that the information be withheld from public disclosure.

- f. *Comparability.* The City shall receive, process, and analyze all Interconnection Requests received under these procedures in a timely manner, as set forth in these procedures. The City shall use the same reasonable efforts in processing and analyzing Interconnection Requests from all Interconnection Customers, whether the Generating Facility is owned or operated by the City, its subsidiaries or affiliates, or others.
- g. *Record Retention.* The City shall maintain for three years records, subject to audit, of all Interconnection Requests received under these procedures, the times required to complete Interconnection Request approvals and disapprovals, and justification for the actions taken on the Interconnection Requests.
- h. *Interconnection Agreement.* After receiving an Interconnection Agreement from the City, the Interconnection Customer shall have 30 Business Days, or another mutually agreeable timeframe, to sign and return the Interconnection Agreement. If the Interconnection Customer does not sign the Interconnection Agreement within

such time, the Interconnection Request shall be deemed withdrawn. The City may waive the withdrawal if no other Interconnection Requests are pending for Generating Facilities that propose to interconnect to the same circuit on the City's System. After the Parties sign the Interconnection Agreement, the interconnection of the Generating Facility shall proceed under the provisions of the Interconnection Agreement.

- i. *Coordination with Affected Systems.* The City shall coordinate the conduct of any studies required to determine the impact of the Interconnection Request on Affected Systems with Affected System operators and, if possible, include those results (if available) in its applicable studies within the time frame specified in these procedures. The City will include such Affected System operators in all meetings held with the Interconnection Customer as required by these procedures. The Interconnection Customer will cooperate with the City in all matters related to the conduct of studies and the determination of modifications to Affected Systems. A City which may be an Affected System shall cooperate with the City with whom interconnection has been requested in all matters related to the conduct of studies and the determination of modifications to Affected Systems.
- j. *Capacity of the Generating Facility.*
 - 1. If the Interconnection Request is for an increase in capacity for an existing Generating Facility, the Interconnection Request shall be evaluated on the basis of the new total capacity of the Generating Facility.
 - 2. If the Interconnection Request is for a Generating Facility that includes multiple energy production devices at a site for which the Interconnection Customer seeks a single Point of Interconnection, the Interconnection Request shall be evaluated on the basis of the aggregate capacity of the multiple devices, unless otherwise agreed to by the City and the Interconnection Customer.
 - 3. The Interconnection Request shall be evaluated using the maximum rated capacity of the Generating Facility, unless otherwise agreed to by the City and the Interconnection Customer.
- k. *Interconnection Agreement Non-Transferable.*
 - 1. The Interconnection Agreement is non-transferable. The Interconnection Customer shall notify the purchaser of the Generating Facility that a new Interconnection Request must be submitted to the City within 30 Business Days of the transfer of ownership or the City's Interconnection Facilities shall be removed or disabled and the Generating Facility disconnected from the City's System.
 - 2. The technical requirements in the Interconnection Agreement shall be applicable to subsequent owners as long as (1) the Generating Facility's maximum rated capacity has not been changed; (2) the Generating Facility has not been modified so as to change its electrical characteristics; (3) the interconnection system has not been modified; and (4) a new Interconnection

Request and Interconnection Agreement is completed.

1. *Isolating or Disconnecting the Generating Facility.*
 1. The City may isolate the Interconnection Customer's premises and/or Generating Facility from the City's System when necessary in order to construct, install, repair, replace, remove, investigate or inspect any of the City's equipment or part of City's System; or if the City determines that isolation of the Interconnection Customer's premises and/or Generating Facility from the City's System is necessary because of emergencies, forced outages, force majeure or compliance with prudent electrical practices.
 2. Whenever feasible, the City shall give the Interconnection Customer reasonable notice of the isolation of the Interconnection Customer's premises and/or Generating Facility from the City's System.
 3. Notwithstanding any other provision of this Standard, if at any time the City determines that the continued operation of the Generating Facility may endanger either (1) the City's personnel or other persons or property or (2) the integrity or safety of the City's System, or otherwise cause unacceptable power quality problems for other electric consumers, the City shall have the right to isolate the Interconnection Customer's premises and/or Generating Facility from the City's System.
 4. The City may disconnect from the City's System any Generating Facility determined to be malfunctioning, or not in compliance with this Standard. The Interconnection Customer must provide proof of compliance with this Standard before the Generating Facility will be reconnected.
- m. *Limitation of Liability.* Each Party's liability to the other Party for any loss, cost, claim, injury, liability, or expense, including reasonable attorney's fees, relating to or arising from any act or omission hereunder, shall be limited to the amount of direct damage actually incurred. In no event shall either Party be liable to the other Party for any indirect, special, incidental, consequential, or punitive damages of any kind.
- n. *Indemnification.* The Parties shall at all times indemnify, defend and save the other Party harmless from any and all damages, losses, claims, including claims and actions relating to injury or death of any person or damage to property, demand, suits, recoveries, costs and expenses, court costs, attorney's fees, and all other obligations by or to third parties, arising out of or resulting from the other Party's action or inaction of its obligations hereunder on behalf of the indemnifying Party, except in cases of gross negligence or intentional wrongdoing by the indemnified Party.
- o. *Insurance.* The Interconnection Customer shall obtain and retain, for as long as the Generating Facility is interconnected with the City's System, liability insurance which protects the Interconnection Customer from claims for bodily injury and/or property damage. The amount of such insurance shall be sufficient to insure against all reasonably foreseeable direct liabilities given the size and nature of the generating equipment being interconnected, the interconnection itself, and the

characteristics of the system to which the interconnection is made. This insurance shall be primary for all purposes. The Interconnection Customer shall provide certificates evidencing this coverage as required by the City. Such insurance shall be obtained from an insurance provider authorized to do business in North Carolina. The City reserves the right to refuse to establish or continue the interconnection of the Generating Facility with the City's System, if such insurance is not in effect.

1. For an Interconnection Customer that is a residential customer of the City proposing to interconnect a Generating Facility no larger than 20 kW, the required coverage shall be a standard homeowner's insurance policy with liability coverage in the amount of at least \$100,000 per occurrence.
2. For an Interconnection Customer that is a non-residential customer of the City proposing to interconnect a Generating Facility no larger than 100 kW, the required coverage shall be comprehensive general liability insurance with coverage in the amount of at least \$300,000 per occurrence.
3. For an Interconnection Customer that is a non-residential customer of the City proposing to interconnect a Generating Facility larger than 100 kW and less than 10 MW, the required coverage shall be comprehensive general liability insurance with coverage in the amount of at least \$1,000,000 per occurrence.
4. An Interconnection Customer of sufficient credit-worthiness may propose to provide this insurance via a self-insurance program if it has a self-insurance program established in accordance with commercially acceptable risk management practices, and such a proposal shall not be unreasonably rejected.

Attachment 1

Glossary of Terms

Small Inverter Process – The procedure for evaluating an Interconnection Request for a certified inverter-based Generating Facility no larger than 20 kW for residential or 100 kW for non-residential that uses the Section 3 screens. The application process uses an all-in-one document that includes a simplified Interconnection Request, simplified procedures, and a brief set of Terms and Conditions. (See Attachment 5.)

Affected System – An electric system other than the City's System that may be affected by the proposed interconnection. The owner of an Affected System might be a Party to the Interconnection Agreement or other study agreements needed to interconnect the Generating Facility.

Applicable Laws and Regulations – All duly promulgated applicable federal, state and local laws, regulations, rules, ordinances, codes, decrees, judgments, directives, or judicial or administrative orders, permits and other duly authorized actions of any Governmental Authority.

Business Day – Monday through Friday, excluding State Holidays.

Commission – The North Carolina Utilities Commission.

Default – The failure of a breaching Party to cure its breach under the Interconnection Agreement.

Distribution System – The City's facilities and equipment used to transmit electricity to ultimate usage points such as homes and industries from nearby generators or from interchanges with higher voltage transmission networks which transport bulk power over longer distances. The voltage levels at which Distribution Systems operate differ among areas.

Distribution Upgrades – The additions, modifications, and upgrades to the City's Distribution System at or beyond the Point of Interconnection to facilitate interconnection of the Generating Facility and render the service necessary to allow the Generating Facility to operate in parallel with the City and to inject electricity onto the City's System. Distribution Upgrades do not include Interconnection Facilities.

Fast Track Process – The procedure for evaluating an Interconnection Request for a certified Generating Facility no larger than 2 MW that includes the Section 3 screens, and customer options meeting.

Generating Facility – The Interconnection Customer's device for the production of electricity identified in the Interconnection Request, but shall not include the Interconnection Customer's Interconnection Facilities.

Good Utility Practice – Any of the practices, methods and acts engaged in or approved by a significant portion of the electric industry during the relevant time period, or any of the practices, methods and acts which, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety and expedition. Good Utility Practice is not intended to be limited to the optimum practice, method, or act to the exclusion of all others, but rather to be acceptable practices, methods, or acts generally accepted in the region.

Governmental Authority – Any federal, state, local or other governmental regulatory or administrative agency, court, commission, department, board, or other governmental subdivision, legislature, rulemaking board, tribunal, or other governmental authority having jurisdiction over the Parties, their respective facilities, or the respective services they provide, and exercising or

entitled to exercise any administrative, executive, police, or taxing authority or power; provided, however, that such term does not include the Interconnection Customer, the City, or any affiliate thereof.

Interconnection Customer – Any entity, including the City, that proposes to interconnect its Generating Facility with the City’s System.

Interconnection Facilities – The City’s Interconnection Facilities and the Interconnection Customer’s Interconnection Facilities. Collectively, Interconnection Facilities include all facilities and equipment between the Generating Facility and the Point of Interconnection, including any modification, additions or upgrades that are necessary to physically and electrically interconnect the Generating Facility to the City’s System. Interconnection Facilities are sole use facilities and shall not include Upgrades.

Interconnection Request – The Interconnection Customer’s request, in accordance with these procedures, to interconnect a new Generating Facility, or to increase the capacity of, or make a Material Modification to, an existing Generating Facility that is interconnected with the City’s System.

Material Modification – A modification to machine data or equipment configuration or to the interconnection site of the Generating Facility that has a material impact on the cost, timing or design of any Interconnection Facilities or Upgrades.

Network Upgrades – Additions, modifications, and upgrades to the City’s Transmission System required to accommodate the interconnection of the Generating Facility to the City’s System. Network Upgrades do not include Distribution Upgrades.

Operating Requirements – Any operating and technical requirements that may be applicable due to Regional Reliability Organization, Independent System Operator, control area, or the City’s requirements, including those set forth in the Interconnection Agreement.

Party or Parties – The City of Concord, North Carolina, Interconnection Customer, and possibly the owner of an Affected System, or any combination of the above.

Point of Interconnection – The point where the Interconnection Facilities connect with the City’s System.

Public Staff – The Public Staff of the North Carolina Utilities Commission.

Queue Position – The order of a valid Interconnection Request, relative to all other pending valid Interconnection Requests, that is established based upon the date and time of receipt of the valid Interconnection Request by the City and a demonstration of site control, if requested.

Reasonable Efforts – With respect to an action required to be attempted or taken by a Party under the Interconnection Agreement, efforts that are timely and consistent with Good Utility Practice and are otherwise substantially equivalent to those a Party would use to protect its own interests.

Standard – The interconnection procedures, forms and agreements approved by the City of Concord’s Council for interconnection of Generating Facilities to its City System.

Study Process – The procedure for evaluating an Interconnection Request that includes the Section 4 scoping meeting, feasibility study, system impact study, and facilities study.

System – The facilities owned, controlled or operated by the City that are used to provide electric service in North Carolina.

Utility – The entity that owns, controls, or operates facilities used for providing electric service in North Carolina.

Transmission System – The facilities owned, controlled or operated by the City that are used to transmit electricity in North Carolina.

Upgrades – The required additions and modifications to the City's System at or beyond the Point of Interconnection. Upgrades may be Network Upgrades or Distribution Upgrades. Upgrades do not include Interconnection Facilities.

Attachment 2

CITY OF CONCORD INTERCONNECTION REQUEST For Generating Facilities Larger than 20 kW Residential or Larger than 100 kW Non-Residential

Utility: _____

Designated Contact Person: _____

Address: _____

Telephone Number: _____

Fax: _____ E-Mail Address: _____

An Interconnection Request is considered complete when it provides all applicable and correct information required below.

Preamble and Instructions

An Interconnection Customer who requests a City of Concord interconnection must submit this Interconnection Request by hand delivery, mail, e-mail, or fax to the City.

Request for: Fast Track Process ___ Study Process ___

(All Generating Facilities 2 MW and larger must use the Study Process.)

Processing Fee or Deposit

Fast Track Process – Non-Refundable Processing Fees

- If the Generating Facility is larger than 20 kW but not larger than 100 kW, the fee is \$250.
- If the Generating Facility is larger than 100 kW but not larger than 2 MW, the fee is \$500.

Study Process – Deposit

If the Interconnection Request is submitted under the Study Process, whether a new submission or an Interconnection Request that did not pass the Fast Track Process, the Interconnection Customer shall submit to the City a deposit not to exceed \$1,000 towards study costs.

Change in Ownership – Non-Refundable Processing Fee

If the Interconnection Request is submitted solely due to a transfer of ownership of the Generating Facility, the fee is \$50.

Interconnection Customer Information (Utility Billing Customer)

Legal Name of the Interconnection Customer (or, if an individual, individual's name)

Name: _____

Contact Person: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Facility Location (if different from above): _____

Telephone (Day): _____ Telephone (Evening): _____

Fax: _____ E-Mail Address: _____

Alternative Contact Information (if different from the Interconnection Customer)

Contact Name: _____

Title: _____

Address: _____

Telephone (Day): _____ Telephone (Evening): _____

Fax: _____ E-Mail Address: _____

Installer

Name: _____

Address: _____

Telephone (Day): _____ Telephone (Evening): _____

Fax: _____ E-Mail Address: _____

Application is for: _____ New Generating Facility

_____ Capacity Addition to Existing Generating Facility

_____ Transfer of Ownership of Existing Generating Facility

If capacity addition to existing Generating Facility, please describe: _____

Will the Generating Facility be used for any of the following?

To Supply Power to the Interconnection Customer? Yes ____ No ____

To Supply Power to the Utility? Yes ____ No ____

To Supply Power to Others? Yes ____ No ____

For installations at locations with existing electric service to which the proposed Generating Facility will interconnect, provide:

(Existing Account Number*)

Requested Point of Interconnection: _____

Interconnection Customer's Requested In-Service Date: _____

Generating Facility Information

Data apply only to the Generating Facility, not the Interconnection Facilities.

Energy Source: Solar __ Wind __ Hydro __ Hydro Type (e.g. Run-of-River): _____
Diesel __ Natural Gas __ Fuel Oil __ Other (state type) _____

Prime Mover: Fuel Cell __ Recip Engine __ Gas Turbine __ Steam Turbine __
Microturbine __ PV __ Other _____

Type of Generator: Synchronous __ Induction __ Inverter __

Generator Nameplate Rating: _____ kW (Typical) Generator Nameplate: _____ kVAR

Interconnection Customer or Customer-Site Load: _____ kW (if none, so state)

Typical Reactive Load (if known): _____

Maximum Physical Export Capability Requested: _____ kW

Customer Requested Primary Voltage: _____

Customer Requested Secondary Voltage: _____

List components of the Generating Facility equipment package that are currently certified:

Equipment Type	Certifying Entity
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____

Is the prime mover compatible with the certified protective relay package? Yes __ No __

Generator (or solar collector)

Manufacturer, Model Name, & Number: _____

Version Number: _____

Nameplate Output Power Rating in kW: (Summer) _____ (Winter) _____

Nameplate Output Power Rating in kVA: (Summer) _____ (Winter) _____

Individual Generator Power Factor

Rated Power Factor: Leading: _____ Lagging: _____

Total Number of Generators in wind farm to be interconnected pursuant to this Interconnection Request: _____ Elevation: _____

Single phase ___ Three phase ___

Inverter Manufacturer, Model Name, & Number (if used): _____

List of adjustable set points for the protective equipment or software: _____

Note: A completed Power Systems Load Flow data sheet must be supplied with the Interconnection Request.

Generating Facility Characteristic Data (for inverter-based machines)

Max design fault contribution current: _____ Instantaneous _____ or RMS? _____

Harmonics Characteristics: _____

Start-up requirements: _____

Generating Facility Characteristic Data (for rotating machines)

RPM Frequency: _____

(*) Neutral Grounding Resistor (if applicable): _____

Synchronous Generators:Direct Axis Synchronous Reactance, X_d : _____ P.U.Direct Axis Transient Reactance, X'_d : _____ P.U.Direct Axis Subtransient Reactance, X''_d : _____ P.U.Negative Sequence Reactance, X_2 : _____ P.U.Zero Sequence Reactance, X_0 : _____ P.U.

KVA Base: _____

Field Volts: _____

Field Amperes: _____

Induction Generators:

Motoring Power (kW): _____

 $I_2^2 t$ or K (Heating Time Constant): _____Rotor Resistance, R_r : _____Stator Resistance, R_s : _____Stator Reactance, X_s : _____Rotor Reactance, X_r : _____Magnetizing Reactance, X_m : _____Short Circuit Reactance, X_d'' : _____

Exciting Current: _____

Temperature Rise: _____

Frame Size: _____

Design Letter: _____

Reactive Power Required In Vars (No Load): _____

Reactive Power Required In Vars (Full Load): _____

Total Rotating Inertia, H: _____ Per Unit on kVA Base

Note: Please contact the City prior to submitting the Interconnection Request to determine if the specified information above is required.

Excitation and Governor System Data for Synchronous Generators Only

Provide appropriate IEEE model block diagram of excitation system, governor system and power system stabilizer (PSS) in accordance with the regional reliability council criteria. A PSS may be determined to be required by applicable studies. A copy of the manufacturer's block diagram may not be substituted.

Interconnection Facilities Information

Will a transformer be used between the generator and the point of common coupling?

Yes ___ No ___

Will the transformer be provided by the Interconnection Customer? Yes ___ No ___

Transformer Data (if applicable, for Interconnection Customer-owned transformer):

Is the transformer: Single phase ___ Three phase ___ Size: _____ kVA

Transformer Impedance: _____ % on _____ kVA Base

If Three Phase:

Transformer Primary: _____ Volts _____ Delta _____ Wye _____ Wye Grounded

Transformer Secondary: _____ Volts _____ Delta _____ Wye _____ Wye Grounded

Transformer Tertiary: _____ Volts _____ Delta _____ Wye _____ Wye Grounded

Transformer Fuse Data (if applicable, for Interconnection Customer-owned fuse):

(Attach copy of fuse manufacturer's Minimum Melt and Total Clearing Time-Current Curves)

Manufacturer: _____ Type: _____ Size: _____ Speed: _____

Interconnecting Circuit Breaker (if applicable):

Manufacturer: _____ Type: _____

Load Rating (Amps): _____ Interrupting Rating (Amps): _____ Trip Speed (Cycles): _____

Interconnection Protective Relays (if applicable):If Microprocessor-Controlled:

List of Functions and Adjustable Setpoints for the protective equipment or software:

	Setpoint Function	Minimum	Maximum
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____
6.	_____	_____	_____

If Discrete Components:

(Enclose Copy of any Proposed Time-Overcurrent Coordination Curves)

Manufacturer: _____ Type: _____ Style/Catalog No.: _____ Proposed Setting: _____

Manufacturer: _____ Type: _____ Style/Catalog No.: _____ Proposed Setting: _____

Manufacturer: _____ Type: _____ Style/Catalog No.: _____ Proposed Setting: _____

Manufacturer: _____ Type: _____ Style/Catalog No.: _____ Proposed Setting: _____

Manufacturer: _____ Type: _____ Style/Catalog No.: _____ Proposed Setting: _____

Current Transformer Data (if applicable):

(Enclose Copy of Manufacturer's Excitation and Ratio Correction Curves)

Manufacturer: _____

Type: _____ Accuracy Class: _____ Proposed Ratio Connection: _____

Manufacturer: _____

Type: _____ Accuracy Class: _____ Proposed Ratio Connection: _____

Potential Transformer Data (if applicable):

Manufacturer: _____

Type: _____ Accuracy Class: _____ Proposed Ratio Connection: _____

Manufacturer: _____

Type: _____ Accuracy Class: _____ Proposed Ratio Connection: _____

General Information

Enclose copy of site electrical one-line diagram showing the configuration of all Generating Facility equipment, current and potential circuits, and protection and control schemes. This one-line diagram must be signed and stamped by a licensed Professional Engineer.

Is One-Line Diagram Enclosed? Yes ___ No ___

Enclose copy of any site documentation that indicates the precise physical location of the proposed Generating Facility (e.g., USGS topographic map or other diagram or documentation).

Proposed location of protective interface equipment on property (include address if different from the Interconnection Customer's address) _____

Enclose copy of any site documentation that describes and details the operation of the protection and control schemes. Is Available Documentation Enclosed? Yes ___ No ___

Enclose copies of schematic drawings for all protection and control circuits, relay current circuits, relay potential circuits, and alarm/monitoring circuits (if applicable).

Are Schematic Drawings Enclosed? Yes ___ No ___

Applicant Signature

I hereby certify that, to the best of my knowledge, all the information provided in this Interconnection Request is true and correct.

For Interconnection Customer: _____ Date: _____

Attachment 3

Certification Codes and Standards

ANSI C84.1-1995 Electric Power Systems and Equipment – Voltage Ratings (60 Hertz)

IEEE 1547, Standard for Interconnecting Distributed Resources with Electric Power Systems
(including use of IEEE 1547.1 testing protocols to establish conformity)

IEEE Std 100-2000, IEEE Standard Dictionary of Electrical and Electronic Terms

IEEE Std 519-1992, IEEE Recommended Practices and Requirements for Harmonic Control in
Electrical Power Systems

IEEE Std C37.108-1989 (R2002), IEEE Guide for the Protection of Network Transformers

IEEE Std C37.90.1-1989 (R1994), IEEE Standard Surge Withstand Capability (SWC) Tests for
Protective Relays and Relay Systems

IEEE Std C37.90.2 (1995), IEEE Standard Withstand Capability of Relay Systems to Radiated
Electromagnetic Interference from Transceivers

IEEE Std C57.12.44-2000, IEEE Standard Requirements for Secondary Network Protectors

IEEE Std C62.41.2-2002, IEEE Recommended Practice on Characterization of Surges in Low
Voltage (1000V and Less) AC Power Circuits

IEEE Std C62.45-1992 (R2002), IEEE Recommended Practice on Surge Testing for Equipment
Connected to Low-Voltage (1000V and Less) AC Power Circuits

NEMA MG 1-1998, Motors and Small Resources, Revision 3

NEMA MG 1-2003 (Rev 2004), Motors and Generators, Revision 1

NFPA 70 (2002), National Electrical Code

UL 1741, Inverters, Converters, Controllers and Interconnection System Equipment for Use
With Distributed Energy Resources

Attachment 4

Certification of Generator Equipment Packages

- 1.0 Generating Facility equipment proposed for use separately or packaged with other equipment in an interconnection system shall be considered certified for interconnected operation if (1) it has been tested in accordance with industry standards for continuous utility interactive operation in compliance with the appropriate codes and standards referenced below by any Nationally Recognized Testing Laboratory (NRTL) recognized by the United States Occupational Safety and Health Administration to test and certify interconnection equipment pursuant to the relevant codes and standards listed in Attachment 3 of the City of Concord Interconnection Procedures, (2) it has been labeled and is publicly listed by such NRTL at the time of the Interconnection Request, and (3) such NRTL makes readily available for verification all test standards and procedures it utilized in performing such equipment certification, and, with consumer approval, the test data itself. The NRTL may make such information available on its website and by encouraging such information to be included in the manufacturer's literature accompanying the equipment.
- 2.0 The Interconnection Customer must verify that the intended use of the equipment falls within the use or uses for which the equipment was tested, labeled, and listed by the NRTL.
- 3.0 Certified equipment shall not require further type-test review, testing, or additional equipment to meet the requirements of this interconnection procedure; however, nothing herein shall preclude the need for an on-site commissioning test by the Parties to the interconnection nor follow-up production testing by the NRTL.
- 4.0 If the certified equipment package includes only interface components (switchgear, inverters, or other interface devices), then an Interconnection Customer must show that the generator or other electric source being utilized with the equipment package is compatible with the equipment package and is consistent with the testing and listing specified for this type of interconnection equipment.
- 5.0 Provided the generator or electric source, when combined with the equipment package, is within the range of capabilities for which it was tested by the NRTL, and does not violate the interface components' labeling and listing performed by the NRTL, no further design review, testing or additional equipment on the Interconnection Customer's side of the point of common coupling shall be required to meet the requirements of the City of Concord Interconnection Procedures.
- 6.0 An equipment package does not include equipment provided by the City.

Attachment 5Application ID No. _____
(For City of Concord use only)

City of Concord
Concord, North Carolina
**Application for
Interconnecting a Certified Inverter Based Generating Facility
No Larger than 20 kW for Residential Customers and
No Larger than 100 kW for Non-Residential Customers**

This Application is considered complete when it provides all applicable and correct information required below. Additional information to evaluate the Application may be required

Processing Fee: **\$100** for Residential
\$250 for Non-Residential System

A non-refundable processing fee must accompany this Application.

Interconnection Customer

Name: _____

Contact Person: _____

Address: _____

City: _____

Telephone (Day): _____ (Evening): _____

Fax: _____ E-Mail Address: _____

Contact or Installer (if different from Interconnection Customer)

Name: _____

Contact Person: _____

Address: _____

City: _____

Telephone (Day): _____ (Evening): _____

Fax: _____ E-Mail Address: _____

Owner of the facility _____

Company: _____

Electrical/Contractor License Number(s): _____

Small Generating Facility Information

Location (If different from above): _____

Electric Service By: City of Concord

Account Number: _____ (*If Existing Customer)

Inverter Manufacturer: _____ Model: _____

Nameplate Rating: _____ KW _____ KVA _____ AC Volts

☐ Single Phase☐ Three Phase

System Design Capacity: _____ KW _____ KVA

Prime Mover: ☐ Photovoltaic ☐ Fuel Cell ☐ Wind TurbineEnergy Source: ☐ Other (describe) _____
☐ Solar☐ Other (describe) _____Is the equipment UL1741 Listed? ☐ Yes ☐ No

If Yes, attach manufacturer's cut-sheet showing UL1741 listing.

Estimated Installation Date: _____

Estimated In-Service Date: _____

List components of the Generating Facility equipment package that are currently certified:

<u>Equipment Type</u>	<u>Certifying Entity</u>
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____
6. _____	_____

Interconnection Customer Signature

I hereby certify that, to the best of my knowledge, the information provided in this Application is true. I agree to abide by the Terms and Conditions for Interconnecting an Inverter-Based Generating Facility No Larger than 20 KW for residential customers and no larger than 100 KW for non-residential customers and return the Certificate of Completion when the Small Generating Facility has been installed.

Signed: _____ Date: _____

Title: _____

Contingent Approval to Interconnect the Small Generating Facility
(For City of Concord Use Only)

Interconnection of the Small Generating Facility is approved contingent upon the Terms and Conditions for Interconnecting an Inverter-Based Generating Facility No Larger than 20 KW for residential customers and no larger than 100 KW for non-residential customers and return of the Certificate of Completion.

City of Concord

Electric Systems Director Signature: _____ Date _____

Application ID Number: _____

City of Concord waive inspection /witness test? ☐ Yes ☐ No

Please complete the form, sign, and mail this form and applicable processing fee to:

City of Concord
Electrical Engineer
P.O. Box 308
Concord, North Carolina 28026-0308
(704) 920-5303

CITY OF CONCORD
Concord, North Carolina

Certificate of Completion for
Certified Renewable Energy Generating System

INTERCONNECTION CUSTOMER

☐ Check if Owner-Installed

Interconnecting Customer: _____

Contact Person: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Telephone (Day): _____ (Evening): _____

Fax: _____ E-Mail Address: _____

Location of System

Address: _____

City: _____ State: _____ Zip: _____

ELECTRICIAN

Name: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Telephone (Day): _____ (Evening): _____

Fax: _____ E-Mail Address: _____

License Number: _____

Date Approval to Install System granted to City of Concord: _____

Application ID Number: _____

INSPECTION

The system have been installed and inspected in compliance with the local Building/Electrical Code of:

(Appropriate Governmental Authority)

Signed (Local Electrical Wiring Inspector, or attach signed electrical inspection):

Signature: _____

Name (Printed): _____

Date: _____

AS A CONDITION OF INTERCONNECTION YOU ARE REQUIRED TO SEND/FAX A COPY OF THIS FORM ALONG WITH A COPY OF THE SIGNED ELECTRICAL PERMIT TO:

City of Concord
Attn: Electrical Engineer
P.O. Box 308
Concord, North Carolina 28026-0308
Phone: (704) 920-5303
Fax: (704) 792-2552

Approval to Energize Facility (For City of Concord use only)

Connection of the System to the City of Concord electric grid is approved contingent upon the terms and conditions of this Agreement:

City of Concord Signature: _____

Name (Printed): _____

Title: _____ Date: _____

**Terms and Conditions
for Interconnecting a Certified Inverter-Based
Generating Facility No Larger than 20 kW Residential or
No Larger than 100 kW for Non-Residential**

1.0 Construction of the Facility

The Interconnection Customer (Customer) may proceed to construct (including operational testing not to exceed two hours) the Generating Facility when the City approves the Interconnection Request and returns it to the Customer.

2.0 Interconnection and Operation

The Customer may interconnect the Generating Facility with the City's System and operate in parallel with the City's System once all of the following have occurred:

2.1 Upon completing construction, the Customer will cause the Generating Facility to be inspected or otherwise certified by the appropriate local electrical wiring inspector with jurisdiction, and

2.2 The Customer returns the Certificate of Completion to the City, and

2.3 The City has completed its inspection of the Generating Facility to ensure that all equipment has been appropriately installed and that all electrical connections have been made in accordance with applicable codes. All inspections must be conducted by the City, at its own expense, within fifteen Business Days after receipt of the Certificate of Completion and shall take place at a time agreeable to the Parties. The City shall provide a written statement that the Generating Facility has passed inspection or shall notify the Customer of what steps it must take to pass inspection as soon as practicable after the inspection takes place; or

2.4 The City has the right to disconnect the Generating Facility in the event of improper installation or failure to return the Certificate of Completion.

2.5 Revenue quality metering equipment must be installed and tested in accordance with applicable American National Standards Institute (ANSI) standards and all applicable regulatory requirements.

3.0 Safe Operations and Maintenance

The Customer shall be fully responsible to operate, maintain, and repair the Generating Facility as required to ensure that it complies at all times with the interconnection standards to which it has been certified.

4.0 Access

The City shall have access to the disconnect switch (if a disconnect switch is required) and metering equipment of the Generating Facility at all times. The City shall provide reasonable notice to the Customer, when possible, prior to using its right of access.

5.0 Disconnection

The City may temporarily disconnect the Generating Facility upon the following conditions:

5.1 For scheduled outages upon reasonable notice.

5.2 For unscheduled outages or emergency conditions.

5.3 If the Generating Facility does not operate in a manner consistent with these Terms and Conditions.

5.4 The City shall inform the Customer in advance of any scheduled disconnection, or as soon as is reasonable after an unscheduled disconnection.

6.0 Indemnification

The Parties shall at all times indemnify, defend, and save the other Party harmless from, any and all damages, losses, claims, including claims and actions relating to injury to or death of any person or damage to property, demand, suits, recoveries, costs and expenses, court costs, attorney fees, and all other obligations by or to third parties, arising out of or resulting from the other Party's action or inactions of its obligations hereunder on behalf of the indemnifying Party, except in cases of gross negligence or intentional wrongdoing by the indemnified Party.

7.0 Insurance

All insurance policies must be maintained with insurers authorized to do business in North Carolina. The Parties agree to the following insurance requirements:

7.1 If the Customer is a residential customer of the City, the required coverage shall be a standard homeowner's insurance policy with liability coverage in the amount of at least \$100,000 per occurrence.

7.2 If the Customer is a non-residential customer of the City, the required coverage shall be comprehensive general liability insurance with coverage in the amount of at least \$300,000 per occurrence.

7.3 The Customer may provide this insurance via a self-insurance program if it has a self-insurance program established in accordance with commercially acceptable risk management practices.

8.0 Limitation of Liability

Each Party's liability to the other Party for any loss, cost, claim, injury, or expense, including reasonable attorney's fees, relating to or arising from any act or omission hereunder, shall be limited to the amount of direct damage actually incurred. In no event shall either Party be liable to the other Party for any indirect, special, incidental, consequential, or punitive damages of any kind.

9.0 Termination

The agreement to interconnect and operate in parallel may be terminated under the following conditions:

9.1 By the Customer

By providing written notice to the City and physically and permanently disconnecting the Generating Facility.

9.2 By the City

If the Generating Facility fails to operate for any consecutive 12-month period or the Customer fails to remedy a violation of these Terms and Conditions.

9.3 Permanent Disconnection

In the event this Agreement is terminated, the City shall have the right to disconnect its facilities or direct the Customer to disconnect its Generating Facility.

9.4 Survival Rights

This Agreement shall continue in effect after termination to the extent necessary to allow or require either Party to fulfill rights or obligations that arose under the Agreement.

10.0 Assignment/Transfer of Ownership of the Facility

- 10.1 This Agreement shall not survive the transfer of ownership of the Generating Facility to a new owner.
- 10.2 The new owner must complete and submit a new Interconnection Request agreeing to abide by these Terms and Conditions for interconnection and parallel operations within 20 Business Days of the transfer of ownership. The City shall acknowledge receipt and return a signed copy of the Interconnection Request within ten Business Days.
- 10.3 The City shall not study or inspect the Generating Facility unless the new owner's Interconnection Request indicates that a Material Modification has occurred or is proposed.

Attachment 6

Feasibility Study Agreement

THIS AGREEMENT (“Agreement”) is made and entered into this ____ day of _____ 20____ by and between _____, a _____ organized and existing under the laws of the State of _____, (“Interconnection Customer,”) and _____, a _____ existing under the laws of the State of _____, (“City”). The Interconnection Customer and the City each may be referred to as a “Party,” or collectively as the “Parties.”

RECITALS

WHEREAS, the Interconnection Customer is proposing to develop a Generating Facility or generating capacity addition to an existing Generating Facility consistent with the Interconnection Request completed by the Interconnection Customer on _____; and

WHEREAS, the Interconnection Customer desires to interconnect the Generating Facility with the City’s System; and

WHEREAS, the Interconnection Customer has requested the City to perform a feasibility study to assess the feasibility of interconnecting the proposed Generating Facility with the City’s System, and of any Affected Systems;

NOW, THEREFORE, in consideration of and subject to the mutual covenants contained herein the Parties agree as follows:

- 1.0 When used in this Agreement, with initial capitalization, the terms specified shall have the meanings indicated or the meanings specified in the City of Concord Interconnection Procedures.
- 2.0 The Interconnection Customer elects and the City shall cause to be performed an interconnection feasibility study consistent with the City of Concord Interconnection Procedures.
- 3.0 The scope of the feasibility study shall be subject to the assumptions set forth in Appendix A to this Agreement.
- 4.0 The feasibility study shall be based on the technical information provided by the Interconnection Customer in the Interconnection Request, as may be modified as the result of the scoping meeting. The City reserves the right to request additional technical information from the Interconnection Customer as may reasonably become necessary consistent with Good Utility Practice during the course of the feasibility study and as designated in accordance with the City of Concord Interconnection Procedures. If the Interconnection Customer modifies its Interconnection Request, the time to complete the feasibility study may be extended by agreement of the Parties.
- 5.0 In performing the study, the City shall rely, to the extent reasonably practicable, on existing studies of recent vintage. The Interconnection Customer shall not be charged for

such existing studies; however, the Interconnection Customer shall be responsible for charges associated with any new study or modifications to existing studies that are reasonably necessary to perform the feasibility study.

- 6.0 The feasibility study report shall provide the following analyses for the purpose of identifying any potential adverse system impacts that would result from the interconnection of the Generating Facility as proposed:
 - 6.1 Initial identification of any circuit breaker short circuit capability limits exceeded as a result of the interconnection;
 - 6.2 Initial identification of any thermal overload or voltage limit violations resulting from the interconnection;
 - 6.3 Initial review of grounding requirements and electric system protection; and
 - 6.4 Description and non-binding estimated cost of facilities required to interconnect the proposed Generating Facility and to address the identified short circuit and power flow issues.
- 7.0 The feasibility study shall model the impact of the Generating Facility regardless of purpose in order to avoid the further expense and interruption of operation for reexamination of feasibility and impacts if the Interconnection Customer later changes the purpose for which the Generating Facility is being installed.
- 8.0 The study shall include the feasibility of any interconnection at a proposed project site where there could be multiple potential Points of Interconnection, as requested by the Interconnection Customer and at the Interconnection Customer's cost.
- 9.0 A deposit of the lesser of 50 percent of good faith estimated feasibility study costs or earnest money of \$1,000 may be required from the Interconnection Customer.
- 10.0 Once the feasibility study is completed, a feasibility study report shall be prepared and transmitted to the Interconnection Customer. Barring unusual circumstances, the feasibility study must be completed and the feasibility study report transmitted within an agreed upon time frame of the Interconnection Customer's agreement to conduct a feasibility study.
- 11.0 Any study fees shall be based on the City's actual costs and will be invoiced to the Interconnection Customer after the study is completed and delivered and will include a summary of professional time.
- 12.0 The Interconnection Customer must pay any study costs that exceed the deposit without interest within 30 calendar days of receipt of the invoice or resolution of any dispute. If the deposit exceeds the invoiced fees, the City shall refund such excess within 30 calendar days of the invoice without interest.

13.0 Governing Law, Regulatory Authority, and Rules

The validity, interpretation and enforcement of this Agreement and each of its provisions shall be governed by the laws of the State of North Carolina, without regard to its conflicts of law principles. This Agreement is subject to all Applicable Laws and Regulations. Each Party expressly reserves the right to seek changes in, appeal, or otherwise contest any laws, orders, or regulations of a Governmental Authority.

14.0 Amendment

The Parties may amend this Agreement by a written instrument duly executed by both Parties.

15.0 No Third-Party Beneficiaries

This Agreement is not intended to and does not create rights, remedies, or benefits of any character whatsoever in favor of any persons, corporations, associations, or entities other than the Parties, and the obligations herein assumed are solely for the use and benefit of the Parties, their successors in interest and where permitted, their assigns.

16.0 Waiver

16.1 The failure of a Party to this Agreement to insist, on any occasion, upon strict performance of any provision of this Agreement will not be considered a waiver of any obligation, right, or duty of, or imposed upon, such Party.

16.2 Any waiver at any time by either Party of its rights with respect to this Agreement shall not be deemed a continuing waiver or a waiver with respect to any other failure to comply with any other obligation, right, duty of this Agreement. Termination or default of this Agreement for any reason by Interconnection Customer shall not constitute a waiver of the Interconnection Customer's legal rights to obtain an interconnection from the City. Any waiver of this Agreement shall, if requested, be provided in writing.

17.0 Multiple Counterparts

This Agreement may be executed in two or more counterparts, each of which is deemed an original but all constitute one and the same instrument.

18.0 No Partnership

This Agreement shall not be interpreted or construed to create an association, joint venture, agency relationship, or partnership between the Parties or to impose any partnership obligation or partnership liability upon either Party. Neither Party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, the other

Party.

19.0 Severability

If any provision or portion of this Agreement shall for any reason be held or adjudged to be invalid or illegal or unenforceable by any court of competent jurisdiction or other Governmental Authority, (1) such portion or provision shall be deemed separate and independent, (2) the Parties shall negotiate in good faith to restore insofar as practicable the benefits to each Party that were affected by such ruling, and (3) the remainder of this Agreement shall remain in full force and effect.

20.0 Subcontractors

Nothing in this Agreement shall prevent a Party from utilizing the services of any subcontractor as it deems appropriate to perform its obligations under this Agreement; provided, however, that each Party shall require its subcontractors to comply with all applicable terms and conditions of this Agreement in providing such services and each Party shall remain primarily liable to the other Party for the performance of such subcontractor.

20.1 The creation of any subcontract relationship shall not relieve the hiring Party of any of its obligations under this Agreement. The hiring Party shall be fully responsible to the other Party for the acts or omissions of any subcontractor the hiring Party hires as if no subcontract had been made; provided, however, that in no event shall the City be liable for the actions or inactions of the Interconnection Customer or its subcontractors with respect to obligations of the Interconnection Customer under this Agreement. Any applicable obligation imposed by this Agreement upon the hiring Party shall be equally binding upon, and shall be construed as having application to, any subcontractor of such Party.

20.2 The obligations under this article will not be limited in any way by any limitation of subcontractor's insurance.

21.0 Reservation of Rights

Each Party shall have the right to make a request to the City Manager to modify this Agreement with respect to any terms and conditions, charges, or classifications of service, and each Party shall have the right to protest any such request by the other Party and to participate fully in any proceeding before the City Manager in which such modifications may be considered. Nothing in this Agreement shall limit the rights of the Parties except to the extent that the Parties otherwise agree as provided herein.

Page No.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be duly executed by their duly authorized officers or agents on the day and year first above written.

City of Concord

[Insert name of Interconnection Customer]

Signed _____
Name (Printed): _____

Title _____

Signed _____
Name (Printed): _____

Title _____

Appendix A to Feasibility Study

Assumptions Used in Conducting the Feasibility Study

The feasibility study will be based upon the information set forth in the Interconnection Request and agreed upon in the scoping meeting held on _____:

- 1) Designation of Point of Interconnection and configuration to be studied.

- 2) Designation of alternative Points of Interconnection and configuration.

1) and 2) are to be completed by the Interconnection Customer. Other assumptions (listed below) are to be provided by the Interconnection Customer and the City.

Attachment 7

System Impact Study Agreement

THIS AGREEMENT (“Agreement”) is made and entered into this ____ day of _____ 20____ by and between _____, a _____ organized and existing under the laws of the State of _____, (“Interconnection Customer,”) and _____, a _____ existing under the laws of the State of _____, (“City”). The Interconnection Customer and the City each may be referred to as a “Party,” or collectively as the “Parties.”

RECITALS

WHEREAS, the Interconnection Customer is proposing to develop a Generating Facility or generating capacity addition to an existing Generating Facility consistent with the Interconnection Request completed by the Interconnection Customer on _____; and

WHEREAS, the Interconnection Customer desires to interconnect the Generating Facility with the City’s System; and

WHEREAS, the City has completed a feasibility study and provided the results of said study to the Interconnection Customer (this recital to be omitted if the Parties have agreed to forego the feasibility study); and

WHEREAS, the Interconnection Customer has requested the City to perform a system impact study to assess the impact of interconnecting the Generating Facility with the City’s System, and of any Affected Systems;

NOW, THEREFORE, in consideration of and subject to the mutual covenants contained herein the Parties agree as follows:

- 1.0 When used in this Agreement, with initial capitalization, the terms specified shall have the meanings indicated or the meanings specified in the City of Concord Interconnection Procedures.
- 2.0 The Interconnection Customer elects and the City shall cause to be performed a system impact study consistent with the City of Concord Interconnection Procedures.
- 3.0 The scope of the system impact study shall be subject to the assumptions set forth in Appendix A to this Agreement.
- 4.0 A system impact study will be based upon the results of the feasibility study and the technical information provided by Interconnection Customer in the Interconnection Request. The City reserves the right to request additional technical information from the Interconnection Customer as may reasonably become necessary consistent with Good Utility Practice during the course of the system impact study. If the Interconnection Customer modifies its designated Point of Interconnection, Interconnection Request, or the technical information provided therein is modified, the time to complete the system impact study may be extended.

- 5.0 A system impact study shall consist of a short circuit analysis, a stability analysis, a power flow analysis, voltage drop and flicker studies, protection and set point coordination studies, and grounding reviews, as necessary. A system impact study shall state the assumptions upon which it is based, state the results of the analyses, and provide the requirement or potential impediments to providing the requested interconnection service, including a preliminary indication of the cost and length of time that would be necessary to correct any problems identified in those analyses and implement the interconnection. A system impact study shall provide a list of facilities that are required as a result of the Interconnection Request and non-binding good faith estimates of cost, responsibility and time to construct.
- 6.0 A distribution system impact study shall incorporate a distribution load flow study, an analysis of equipment interrupting ratings, protection coordination study, voltage drop and flicker studies, protection and set point coordination studies, grounding reviews, and the impact on electric system operation, as necessary.
- 7.0 Affected Systems may participate in the preparation of a system impact study, with a division of costs among such entities as they may agree. All Affected Systems shall be afforded an opportunity to review and comment upon a system impact study that covers potential adverse system impacts on their electric systems, and the Parties shall agree upon additional time needed to complete a system impact study requiring review by Affected Systems.
- 8.0 If the City uses a queuing procedure for sorting or prioritizing projects and their associated cost responsibilities for any required Network Upgrades, the system impact study shall consider all generating facilities (and with respect to paragraph 8.3 below, any identified Upgrades associated with such higher queued interconnection) that, on the date the system impact study is commenced –
 - 8.1. Are directly interconnected with the City’s electric system; or
 - 8.2. Are interconnected with Affected Systems and may have an impact on the proposed interconnection; and
 - 8.3. Have a pending higher queued Interconnection Request to interconnect with the City’s electric system.
- 9.0 A distribution system impact study, if required, shall be completed and the results transmitted to the Interconnection Customer within an agreed upon time frame after this Agreement is signed by the Parties. A transmission system impact study, if required, shall be completed and the results transmitted to the Interconnection Customer within agreed upon time frame after this Agreement is signed by the Parties, unless the study involves Affected Systems per 7.0.

- 10.0 A deposit of the equivalent of the good faith estimated cost of a distribution system impact study and the good faith estimated cost of a transmission system impact study may be required from the Interconnection Customer.
- 11.0 Any study fees shall be based on the City's actual costs and will be invoiced to the Interconnection Customer after the study is completed and delivered and will include a summary of professional time.
- 12.0 The Interconnection Customer must pay any study costs that exceed the deposit without interest within 30 calendar days of receipt of the invoice or resolution of any dispute. If the deposit exceeds the invoiced fees, the City shall refund such excess within 30 calendar days of the invoice without interest.

13.0 Governing Law, Regulatory Authority, and Rules

The validity, interpretation and enforcement of this Agreement and each of its provisions shall be governed by the laws of the State of North Carolina, without regard to its conflicts of law principles. This Agreement is subject to all Applicable Laws and Regulations. Each Party expressly reserves the right to seek changes in, appeal, or otherwise contest any laws, orders, or regulations of a Governmental Authority.

14.0 Amendment

The Parties may amend this Agreement by a written instrument duly executed by both Parties.

15.0 No Third-Party Beneficiaries

This Agreement is not intended to and does not create rights, remedies, or benefits of any character whatsoever in favor of any persons, corporations, associations, or entities other than the Parties, and the obligations herein assumed are solely for the use and benefit of the Parties, their successors in interest and where permitted, their assigns.

16.0 Waiver

- 16.1. The failure of a Party to this Agreement to insist, on any occasion, upon strict performance of any provision of this Agreement will not be considered a waiver of any obligation, right, or duty of, or imposed upon, such Party.
- 16.2. Any waiver at any time by either Party of its rights with respect to this Agreement shall not be deemed a continuing waiver or a waiver with respect to any other failure to comply with any other obligation, right, duty of this Agreement. Termination or default of this Agreement for any reason by Interconnection Customer shall not constitute a waiver of the Interconnection Customer's legal rights to obtain an interconnection from the City. Any waiver of this Agreement shall, if requested, be provided in writing.

17.0 Multiple Counterparts

This Agreement may be executed in two or more counterparts, each of which is deemed an original but all constitute one and the same instrument.

18.0 No Partnership

This Agreement shall not be interpreted or construed to create an association, joint venture, agency relationship, or partnership between the Parties or to impose any partnership obligation or partnership liability upon either Party. Neither Party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, the other Party.

19.0 Severability

If any provision or portion of this Agreement shall for any reason be held or adjudged to be invalid or illegal or unenforceable by any court of competent jurisdiction or other Governmental Authority, (1) such portion or provision shall be deemed separate and independent, (2) the Parties shall negotiate in good faith to restore insofar as practicable the benefits to each Party that were affected by such ruling, and (3) the remainder of this Agreement shall remain in full force and effect.

20.0 Subcontractors

Nothing in this Agreement shall prevent a Party from utilizing the services of any subcontractor as it deems appropriate to perform its obligations under this Agreement; provided, however, that each Party shall require its subcontractors to comply with all applicable terms and conditions of this Agreement in providing such services and each Party shall remain primarily liable to the other Party for the performance of such subcontractor.

20.1. The creation of any subcontract relationship shall not relieve the hiring Party of any of its obligations under this Agreement. The hiring Party shall be fully responsible to the other Party for the acts or omissions of any subcontractor the hiring Party hires as if no subcontract had been made; provided, however, that in no event shall the City be liable for the actions or inactions of the Interconnection Customer or its subcontractors with respect to obligations of the Interconnection Customer under this Agreement. Any applicable obligation imposed by this Agreement upon the hiring Party shall be equally binding upon, and shall be construed as having application to, any subcontractor of such Party.

20.2. The obligations under this article will not be limited in any way by any limitation of subcontractor's insurance.

21.0 Reservation of Rights

Either Party shall have the right to make a request to the City Manager to modify this Agreement with respect to any rates, terms and conditions, charges, or classifications of service, and each Party shall have the right to protest any such request by the other Party

and to participate fully in any proceeding before the City Manager in which such modifications may be considered. Nothing in this Agreement shall limit the rights of the Parties except to the extent that the Parties otherwise agree as provided herein.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be duly executed by their duly authorized officers or agents on the day and year first above written.

City of Concord

[Insert name of Interconnection Customer]

Signed _____
Name (Printed):

Signed _____
Name (Printed):

Title _____

Title _____

Appendix A to System Impact Study

Assumptions Used in Conducting the System Impact Study

The system impact study shall be based upon the results of the feasibility study, subject to any modifications in accordance with the Interconnection Procedures, and the following assumptions:

- 1) Designation of Point of Interconnection and configuration to be studied.

- 2) Designation of alternative Points of Interconnection and configuration.

1) and 2) are to be completed by the Interconnection Customer. Other assumptions (listed below) are to be provided by the Interconnection Customer and the City.

Attachment 8

Facilities Study Agreement

THIS AGREEMENT ("Agreement") is made and entered into this ____ day of _____ 20____ by and between _____, a _____ organized and existing under the laws of the State of _____, ("Interconnection Customer,") and _____, a _____ existing under the laws of the State of _____, ("City"). The Interconnection Customer and the City each may be referred to as a "Party," or collectively as the "Parties."

RECITALS

WHEREAS, the Interconnection Customer is proposing to develop a Generating Facility or generating capacity addition to an existing Generating Facility consistent with the Interconnection Request completed by the Interconnection Customer on _____; and

WHEREAS, the Interconnection Customer desires to interconnect the Generating Facility with the City's System; and

WHEREAS, the City has completed a system impact study and provided the results of said study to the Interconnection Customer (this recital to be omitted if the Parties have agreed to forego the system impact study); and

WHEREAS, the Interconnection Customer has requested the City to perform a facilities study to specify and estimate the cost of the equipment, engineering, procurement and construction work needed to implement the conclusions of the system impact study and/or any other relevant studies in accordance with Good Utility Practice to physically and electrically connect the Generating Facility with the City's System;

NOW, THEREFORE, in consideration of and subject to the mutual covenants contained herein the Parties agree as follows:

- 1.0 When used in this Agreement, with initial capitalization, the terms specified shall have the meanings indicated or the meanings specified in the City of Concord Interconnection Procedures.
- 2.0 The Interconnection Customer elects and the City shall cause to be performed a facilities study consistent with the City of Concord Interconnection Procedures.
- 3.0 The scope of the facilities study shall be subject to data provided in Appendix A to this Agreement.
- 4.0 The facilities study shall specify and estimate the cost of the equipment, engineering, procurement and construction work (including overheads) needed to implement the conclusions of the system impact studies. The facilities study shall also identify (1) the electrical switching configuration of the equipment, including, without limitation, transformer, switchgear, meters, and other station equipment, (2) the nature and estimated cost of the City's Interconnection Facilities and Upgrades necessary to accomplish the

interconnection, and (3) an estimate of the time required to complete the construction and installation of such facilities.

- 5.0 The City may propose to group facilities required for more than one Interconnection Customer in order to minimize facilities costs through economies of scale, but any Interconnection Customer may require the installation of facilities required for its own Generating Facility if it is willing to pay the costs of those facilities.
- 6.0 A deposit of the good faith estimated facilities study costs may be required from the Interconnection Customer.
- 7.0 In cases where Upgrades are required, the facilities study must be completed within an agreed upon time frame of the receipt of this Agreement. In cases where no Upgrades are necessary, and the required facilities are limited to Interconnection Facilities, the facilities study must be completed within 45 Business Days.
- 8.0 Once the facilities study is completed, a facilities study report shall be prepared and transmitted to the Interconnection Customer.
- 9.0 Any study fees shall be based on the City's actual costs and will be invoiced to the Interconnection Customer after the study is completed and delivered and will include a summary of professional time.
- 10.0 The Interconnection Customer must pay any study costs that exceed the deposit without interest within 30 calendar days of receipt of the invoice or resolution of any dispute. If the deposit exceeds the invoiced fees, the City shall refund such excess within 30 calendar days of the invoice without interest.

11.0 Governing Law, Regulatory Authority, and Rules

The validity, interpretation and enforcement of this Agreement and each of its provisions shall be governed by the laws of the State of North Carolina, without regard to its conflicts of law principles. This Agreement is subject to all Applicable Laws and Regulations. Each Party expressly reserves the right to seek changes in, appeal, or otherwise contest any laws, orders, or regulations of a Governmental Authority.

12.0 Amendment

The Parties may amend this Agreement by a written instrument duly executed by both Parties.

13.0 No Third-Party Beneficiaries

This Agreement is not intended to and does not create rights, remedies, or benefits of any character whatsoever in favor of any persons, corporations, associations, or entities other than the Parties, and the obligations herein assumed are solely for the use and benefit of the Parties, their successors in interest and where permitted, their assigns.

14.0 Waiver

- 14.1. The failure of a Party to this Agreement to insist, on any occasion, upon strict performance of any provision of this Agreement will not be considered a waiver of any obligation, right, or duty of, or imposed upon, such Party.
- 14.2. Any waiver at any time by either Party of its rights with respect to this Agreement shall not be deemed a continuing waiver or a waiver with respect to any other failure to comply with any other obligation, right, duty of this Agreement. Termination or default of this Agreement for any reason by Interconnection Customer shall not constitute a waiver of the Interconnection Customer's legal rights to obtain an interconnection from the City. Any waiver of this Agreement shall, if requested, be provided in writing.

15.0 Multiple Counterparts

This Agreement may be executed in two or more counterparts, each of which is deemed an original but all constitute one and the same instrument.

16.0 No Partnership

This Agreement shall not be interpreted or construed to create an association, joint venture, agency relationship, or partnership between the Parties or to impose any partnership obligation or partnership liability upon either Party. Neither Party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, the other Party.

17.0 Severability

If any provision or portion of this Agreement shall for any reason be held or adjudged to be invalid or illegal or unenforceable by any court of competent jurisdiction or other Governmental Authority, (1) such portion or provision shall be deemed separate and independent, (2) the Parties shall negotiate in good faith to restore insofar as practicable the benefits to each Party that were affected by such ruling, and (3) the remainder of this Agreement shall remain in full force and effect.

18.0 Subcontractors

Nothing in this Agreement shall prevent a Party from utilizing the services of any subcontractor as it deems appropriate to perform its obligations under this Agreement; provided, however, that each Party shall require its subcontractors to comply with all applicable terms and conditions of this Agreement in providing such services and each Party shall remain primarily liable to the other Party for the performance of such subcontractor.

- 18.1. The creation of any subcontract relationship shall not relieve the hiring Party of any of its obligations under this Agreement. The hiring Party shall be fully responsible to the other Party for the acts or omissions of any subcontractor the hiring Party hires as if no subcontract had been made; provided, however, that in

no event shall the City be liable for the actions or inactions of the Interconnection Customer or its subcontractors with respect to obligations of the Interconnection Customer under this Agreement. Any applicable obligation imposed by this Agreement upon the hiring Party shall be equally binding upon, and shall be construed as having application to, any subcontractor of such Party.

18.2. The obligations under this article will not be limited in any way by any limitation of subcontractor's insurance.

19.0 Reservation of Rights

Each Party shall have the right to make a request to the City Manager to modify this Agreement with respect to any rates, terms and conditions, charges, or classifications of service, and each Party shall have the right to protest any such request by the other Party and to participate fully in any proceeding before the City Manager in which such modifications may be considered. Nothing in this Agreement shall limit the rights of the Parties except to the extent that the Parties otherwise agree as provided herein.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be duly executed by their duly authorized officers or agents on the day and year first above written.

City of Concord

[Insert name of Interconnection Customer]

Signed _____
Name (Printed): _____

Title _____

Signed _____
Name (Printed): _____

Title _____

Appendix A to Facilities Study Agreement

Data to Be Provided by the Interconnection Customer with the Facilities Study Agreement

Provide location plan and simplified one-line diagram of the plant and station facilities. For staged projects, please indicate future generation, circuits, etc.

On the one-line diagram, indicate the generation capacity attached at each metering location. (Maximum load on CT/PT)

On the one-line diagram, indicate the location of auxiliary power. (Minimum load on CT/PT) Amps

One set of metering is required for each generation connection to the new ring bus or existing Utility station. Number of generation connections: _____

Will an alternate source of auxiliary power be available during CT/PT maintenance?

Yes _____ No _____

Will a transfer bus on the generation side of the metering require that each meter set be designed for the total plant generation? Yes _____ No _____

(Please indicate on the one-line diagram).

What type of control system or PLC will be located at the Generating Facility?

What protocol does the control system or PLC use?

Please provide a 7.5-minute quadrangle map of the site. Indicate the plant, station, distribution line, and property lines.

Physical dimensions of the proposed interconnection station:

Bus length from generation to interconnection station:

Line length from interconnection station to Utility's System.

Tower number observed in the field (Painted on tower leg)*:

Number of third party easements required for lines*:

* To be completed in coordination with the City.

Is the Generating Facility located in City's service area?

Yes _____ No _____ If No, please provide name of local provider:

Please provide the following proposed schedule dates:

Begin Construction Date: _____

Generator step-up transformers Date: _____

receive back feed power

Generation Testing Date: _____

Commercial Operation Date: _____

Attachment 9

**CITY OF CONCORD
INTERCONNECTION AGREEMENT**

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This Interconnection Agreement (“Agreement”) is made and entered into this ____ day of _____, 20__, by _____ (“City”), and _____ (“Interconnection Customer”) each hereinafter sometimes referred to individually as “Party” or both referred to collectively as the “Parties.”

City Information

City: _____

Attention: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____

Interconnection Customer Information

Interconnection Customer: _____

Attention: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____

Interconnection Request ID No: _____

In consideration of the mutual covenants set forth herein, the Parties agree as follows:

Scope and Limitations of Agreement*Applicability*

This Agreement shall be used for all Interconnection Requests submitted under the North Carolina Interconnection Procedures except for those submitted under the Small Inverter Process in Section 2 of the Interconnection Procedures.

Purpose

This Agreement governs the terms and conditions under which the Interconnection Customer’s Generating Facility will interconnect with, and operate in parallel with, the City’s System.

No Agreement to Purchase or Deliver Power or RECs

This Agreement does not constitute an agreement to purchase or deliver the Interconnection Customer's power or Renewable Energy Certificates (RECs). The purchase or delivery of power, RECs that might result from the operation of the Generating Facility, and other services that the Interconnection Customer may require will be covered under separate agreements, if any. The Interconnection Customer will be responsible for separately making all necessary arrangements (including scheduling) for delivery of electricity with the applicable City.

Limitations

Nothing in this Agreement is intended to affect any other agreement between the City and the Interconnection Customer.

Responsibilities of the Parties

The Parties shall perform all obligations of this Agreement in accordance with all Applicable Laws and Regulations, Operating Requirements, and Good Utility Practice.

The Interconnection Customer shall construct, interconnect, operate and maintain its Generating Facility and construct, operate, and maintain its Interconnection Facilities in accordance with the applicable manufacturer's recommended maintenance schedule, and in accordance with this Agreement, and with Good Utility Practice.

The City shall construct, operate, and maintain its System and Interconnection Facilities in accordance with this Agreement, and with Good Utility Practice.

The Interconnection Customer agrees to construct its facilities or systems in accordance with applicable specifications that meet or exceed those provided by the National Electrical Safety Code, the American National Standards Institute, IEEE, Underwriters' Laboratories, and Operating Requirements in effect at the time of construction and other applicable national and state codes and standards. The Interconnection Customer agrees to design, install, maintain, and operate its Generating Facility so as to reasonably minimize the likelihood of a disturbance adversely affecting or impairing the System or equipment of the City and any Affected Systems.

Each Party shall operate, maintain, repair, and inspect, and shall be fully responsible for the facilities that it now or subsequently may own unless otherwise specified in the Appendices to this Agreement. Each Party shall be responsible for the safe installation, maintenance, repair and condition of their respective lines and appurtenances on their respective sides of the point of change of ownership. The City and the Interconnection Customer, as appropriate, shall provide Interconnection Facilities that adequately protect the City's System, personnel, and other persons from damage and injury. The allocation of responsibility for the design, installation, operation, maintenance and ownership of Interconnection Facilities shall be delineated in the Appendices to this Agreement.

The City shall coordinate with all Affected Systems to support the interconnection.

Parallel Operation Obligations

Once the Generating Facility has been authorized to commence parallel operation, the Interconnection Customer shall abide by all rules and procedures pertaining to the

parallel operation of the Generating Facility in the applicable control area, including, but not limited to: 1) any rules and procedures concerning the operation of generation set forth in approved tariffs or by the applicable system operator(s) for the City's System and; 2) the Operating Requirements set forth in Appendix 5 of this Agreement.

Metering

The Interconnection Customer shall be responsible for the City's reasonable and necessary cost for the purchase, installation, operation, maintenance, testing, repair, and replacement of metering and data acquisition equipment specified in Appendices 2 and 3 of this Agreement. The Interconnection Customer's metering (and data acquisition, as required) equipment shall conform to applicable industry rules and Operating Requirements.

Reactive Power

The Interconnection Customer shall design its Generating Facility to maintain a composite power delivery at continuous rated power output at the Point of Interconnection at a power factor within the range of 0.95 leading to 0.95 lagging, unless the City has established different requirements that apply to all similarly situated generators in the control area on a comparable basis. The requirements of this paragraph shall not apply to wind generators.

The City is required to pay the Interconnection Customer for reactive power that the Interconnection Customer provides or absorbs from the Generating Facility when the City requests the Interconnection Customer to operate its Generating Facility outside the range specified in Article 1.8.1. In addition, if the City pays its own or affiliated generators for reactive power service within the specified range, it must also pay the Interconnection Customer.

Payments shall be in accordance with the City's applicable rate schedule then in effect unless the provision of such service(s) is subject to a regional transmission organization or independent system operator FERC-approved rate schedule. To the extent that no rate schedule is in effect at the time the Interconnection Customer is required to provide or absorb reactive power under this Agreement, the Parties agree to expeditiously file such rate schedule and agree to support any request for waiver of any prior notice requirement in order to compensate the Interconnection Customer from the time service commenced.

Capitalized Terms

Capitalized terms used herein shall have the meanings specified in the Glossary of Terms in Attachment 1 of the City of Concord Interconnection Procedures or the body of this Agreement.

Inspection, Testing, Authorization, and Right of Access*Equipment Testing and Inspection*

The Interconnection Customer shall test and inspect its Generating Facility and Interconnection Facilities prior to interconnection. The Interconnection Customer shall notify the City of such activities in a mutually agreeable timeframe prior to such testing and inspection. Testing and inspection shall occur on a Business Day, unless otherwise agreed to by the Parties. The City may, at its own expense, send qualified personnel to the Generating

Facility site to inspect the interconnection and observe the testing. The Interconnection Customer shall provide the City a written test report when such testing and inspection is completed.

The City shall provide the Interconnection Customer written acknowledgment that it has received the Interconnection Customer's written test report. Such written acknowledgment shall not be deemed to be or construed as any representation, assurance, guarantee, or warranty by the City of the safety, durability, suitability, or reliability of the Generating Facility or any associated control, protective, and safety devices owned or controlled by the Interconnection Customer or the quality of power produced by the Generating Facility.

Authorization Required Prior to Parallel Operation

The City shall use Reasonable Efforts to list applicable parallel operation requirements in Appendix 5 of this Agreement. Additionally, the City shall notify the Interconnection Customer of any changes to these requirements as soon as they are known. The City shall make Reasonable Efforts to cooperate with the Interconnection Customer in meeting requirements necessary for the Interconnection Customer to commence parallel operations by the in-service date.

The Interconnection Customer shall not operate its Generating Facility in parallel with the City's System without prior written authorization of the City. The City will provide such authorization once the City receives notification that the Interconnection Customer has complied with all applicable parallel operation requirements. Such authorization shall not be unreasonably withheld, conditioned, or delayed.

Right of Access

Upon reasonable notice, the City may send a qualified person to the premises of the Interconnection Customer at or immediately before the time the Generating Facility first produces energy to inspect the interconnection, and observe the commissioning of the Generating Facility (including any required testing), startup, and operation for a period of up to three Business Days after initial start-up of the unit. In addition, the Interconnection Customer shall notify the City at least five Business Days prior to conducting any on-site verification testing of the Generating Facility.

Following the initial inspection process described above, at reasonable hours, and upon reasonable notice, or at any time without notice in the event of an emergency or hazardous condition, the City shall have access to the Interconnection Customer's premises for any reasonable purpose in connection with the performance of the obligations imposed on it by this Agreement or if necessary to meet its legal obligation to provide service to its customers.

Each Party shall be responsible for its own costs associated with following this Article.

Effective Date, Term, Termination, and Disconnection

Effective Date

This Agreement shall become effective upon execution by the Parties.

Term of Agreement

This Agreement shall become effective on the Effective Date and shall remain in effect for a period as agreed upon by the Parties and shall be automatically renewed for each successive one-year period thereafter, unless terminated earlier in accordance with Article 3.3 of this Agreement.

Termination

No termination shall become effective until the Parties have complied with all Applicable Laws and Regulations applicable to such termination.

The Interconnection Customer may terminate this Agreement at any time by giving the City 60 Business Days written notice and physically and permanently disconnecting the Generating Facility from the City's System.

Either Party may terminate this Agreement after Default pursuant to Article 7.6.

Upon termination of this Agreement, the Generating Facility will be disconnected from the City's System. All costs required to effectuate such disconnection shall be borne by the terminating Party, unless such termination resulted from the non-terminating Party's Default of this Agreement or such non-terminating Party otherwise is responsible for these costs under this Agreement.

The termination of this Agreement shall not relieve either Party of its liabilities and obligations, owed or continuing at the time of the termination.

The provisions of this article shall survive termination or expiration of this Agreement.

Temporary Disconnection

Temporary disconnection shall continue only for so long as reasonably necessary under Good Utility Practice.

Emergency Conditions

“Emergency Condition” shall mean a condition or situation: (1) that in the judgment of the Party making the claim is imminently likely to endanger life or property; or (2) that, in the case of the City, is imminently likely (as determined in a non-discriminatory manner) to cause a material adverse effect on the security of, or damage to the City's System, the City's Interconnection Facilities or the systems of others to which the City's System is directly connected; or (3) that, in the case of the Interconnection Customer, is imminently likely (as determined in a non-discriminatory manner) to cause a material adverse effect on the security of, or damage to, the Generating Facility or the Interconnection Customer's Interconnection Facilities. Under Emergency Conditions, the City may immediately suspend interconnection service and temporarily disconnect the Generating Facility. The City shall notify the Interconnection Customer promptly when it becomes aware of an Emergency Condition that may reasonably be expected to affect the Interconnection Customer's operation of the Generating Facility. The

Interconnection Customer shall notify the City promptly when it becomes aware of an Emergency Condition that may reasonably be expected to affect the City's System or any Affected Systems. To the extent information is known, the notification shall describe the Emergency Condition, the extent of the damage or deficiency, the expected effect on the operation of both Parties' facilities and operations, its anticipated duration, and the necessary corrective action.

Routine Maintenance, Construction, and Repair

The City may interrupt interconnection service or curtail the output of the Generating Facility and temporarily disconnect the Generating Facility from the City's System when necessary for routine maintenance, construction, and repairs on the City's System. The City shall provide the Interconnection Customer with notice prior to such interruption. The City shall use Reasonable Efforts to coordinate such reduction or temporary disconnection with the Interconnection Customer.

Forced Outages

During any forced outage, the City may suspend interconnection service to effect immediate repairs on the City's System. The City shall use Reasonable Efforts to provide the Interconnection Customer with prior notice. If prior notice is not given, the City shall, upon request, provide the Interconnection Customer written documentation after the fact explaining the circumstances of the disconnection.

Adverse Operating Effects

The City shall notify the Interconnection Customer as soon as practicable if, based on Good Utility Practice, operation of the Generating Facility may cause disruption or deterioration of service to other customers served from the same electric system, or if operating the Generating Facility could cause damage to the City's System or Affected Systems. Supporting documentation used to reach the decision to disconnect shall be provided to the Interconnection Customer upon request. If, after notice, the Interconnection Customer fails to remedy the adverse operating effect within a reasonable time, the City may disconnect the Generating Facility. The City shall provide the Interconnection Customer with notice of such disconnection, unless the provisions of Article 3.4.1 apply.

Modification of the Generating Facility

The Interconnection Customer must receive written authorization from the City before making any change to the Generating Facility that may have a material impact on the safety or reliability of the City's System. Such authorization shall not be unreasonably withheld. Modifications shall be done in accordance with Good Utility Practice. If the Interconnection Customer makes such modification without the City's prior written authorization, the latter shall have the right to temporarily disconnect the Generating Facility.

Reconnection

The Parties shall cooperate with each other to restore the Generating Facility, Interconnection Facilities, and the City's System to their normal operating state as soon as reasonably practicable following a temporary or emergency disconnection.

Cost Responsibility for Interconnection Facilities and Distribution Upgrades*Interconnection Facilities*

The Interconnection Customer shall pay for the cost of the Interconnection Facilities itemized in Appendix 2 of this Agreement. The City shall provide a best estimate cost, including overheads, for the purchase and construction of its Interconnection Facilities and provide a detailed itemization of such costs. Costs associated with Interconnection Facilities may be shared with other entities that may benefit from such facilities by agreement of the Interconnection Customer, such other entities, and the City.

The Interconnection Customer shall be responsible for its share of all reasonable expenses, including overheads, associated with (1) owning, operating, maintaining, repairing, and replacing its own Interconnection Facilities, and (2) operating, maintaining, repairing, and replacing the City's Interconnection Facilities.

Distribution Upgrades

The City shall design, procure, construct, install, and own the Distribution Upgrades described in Appendix 6 of this Agreement. The actual cost of the Distribution Upgrades, including overheads, shall be directly assigned to the Interconnection Customer.

Cost Responsibility for Network Upgrades*Applicability*

No portion of this Article 5 shall apply unless the interconnection of the Generating Facility requires Network Upgrades.

Network Upgrades

The City shall design, procure, construct, install, and own the Network Upgrades described in Appendix 6 of this Agreement. If the City and the Interconnection Customer agree, the Interconnection Customer may construct Network Upgrades that are located on land owned by the Interconnection Customer. Unless the City elects to pay for Network Upgrades, the actual cost of the Network Upgrades, including overheads, shall be borne by the Interconnection Customer.

Billing, Payment, Milestones, and Financial Security*Billing and Payment Procedures and Final Accounting*

The City shall bill the Interconnection Customer for the design, engineering, construction, and procurement costs of Interconnection Facilities and Upgrades contemplated by this Agreement in accordance with City Policy (See Appendix 2). The Interconnection Customer shall pay each bill within 30 calendar days of receipt.

Milestones

The Parties shall agree on milestones for which each Party is responsible and list them in Appendix 4 of this Agreement. A Party's obligations under this provision may be extended by agreement. If a Party anticipates that it will be unable to meet a milestone for any reason other than a Force Majeure Event, it shall immediately notify the other Party of the reason(s) for not meeting the milestone and (1) propose the earliest reasonable alternate date by which it can attain this and future milestones, and (2) request appropriate amendments to Appendix 4. The Party affected by the failure to meet a milestone shall not unreasonably withhold agreement to such an amendment unless (1) it will suffer significant uncompensated economic or operational harm from the delay, (2) attainment of the same milestone has previously been delayed, or (3) it has reason to believe that the delay in meeting the milestone is intentional or unwarranted notwithstanding the circumstances explained by the Party proposing the amendment.

Financial Security Arrangements

At least 30 Calendar Days prior to the commencement of the design, procurement, installation, or construction of a discrete portion of the City's Interconnection Facilities and Upgrades, the Interconnection Customer shall provide the City, at the Interconnection Customer's option a surety bond, letter of credit or cash escrow that is reasonably acceptable to the City and is consistent with the Uniform Commercial Code of North Carolina. Such security for payment shall be in an amount sufficient to cover the costs for constructing, designing, procuring, and installing the applicable portion of the City's Interconnection Facilities and Upgrades and shall be reduced on a dollar-for-dollar basis for payments made to the City under this Agreement during its term. In addition:

The guarantee must be made by an entity that meets the creditworthiness requirements of the City, and contain terms and conditions that guarantee payment of any amount that may be due from the Interconnection Customer, up to an agreed-to maximum amount.

The letter of credit or surety bond must be issued by a financial institution or insurer reasonably acceptable to the City and licensed under the laws of North Carolina and must specify a reasonable expiration date.

The City may waive the security requirements if its credit policies show that the financial risks involved are de minimus, or if the City's policies allow the acceptance of an alternative showing of credit-worthiness from the Interconnection Customer.

Assignment, Liability, Indemnity, Force Majeure, Consequential Damages, and Default

Assignment

This Agreement shall not survive the transfer of ownership of the Generating Facility to a new owner. The new owner must complete a new Interconnection Request and submit it to the City within 30 Calendar Days of the transfer of ownership or the City's Interconnection Facilities shall be removed or disabled and the Generating Facility disconnected from the City's System. The City shall not study or inspect the Generating Facility unless the new owner's Interconnection Request indicates that a Material Modification has occurred or is proposed.

The Interconnection Customer shall have the right to assign this Agreement, without the consent of the City, for collateral security purposes to aid in providing financing for the Generating Facility, provided that the Interconnection Customer will promptly notify the City of any such assignment. Assignment shall not relieve a Party of its obligations, nor shall a Party's obligations be enlarged, in whole or in part, by reason thereof.

Any attempted assignment that violates this article is void and ineffective.

Limitation of Liability

Each Party's liability to the other Party for any loss, cost, claim, injury, liability, or expense, including reasonable attorney's fees, relating to or arising from any act or omission in its performance of this Agreement, shall be limited to the amount of direct damage actually incurred. In no event shall either Party be liable to the other Party for any indirect, special, incidental, consequential, or punitive damages of any kind, except as authorized by this Agreement.

Indemnity

This provision protects each Party from liability incurred to third parties as a result of carrying out the provisions of this Agreement. Liability under this provision is exempt from the general limitations on liability found in Article 7.2.

The Parties shall at all times indemnify, defend, and save the other Party harmless from, any and all damages, losses, claims, including claims and actions relating to injury to or death of any person or damage to property, demand, suits, recoveries, costs and expenses, court costs, attorney fees, and all other obligations by or to third parties, arising out of or resulting from the other Party's action or inaction of its obligations under this Agreement on behalf of the indemnifying Party, except in cases of gross negligence or intentional wrongdoing by the indemnified Party.

If an indemnified Party is entitled to indemnification under this Article as a result of a claim by a third party, and the indemnifying Party fails, after notice and reasonable opportunity to proceed under this Article, to assume the defense of such claim, such indemnified Party may at the expense of the indemnifying Party contest, settle or consent to the entry of any judgment with respect to, or pay in full, such claim.

If an indemnifying Party is obligated to indemnify and hold any indemnified Party harmless under this Article, the amount owing to the indemnified Party shall be the amount of such indemnified Party's actual loss, net of any insurance or other recovery.

Promptly after receipt by an indemnified Party of any claim or notice of the commencement of any action or administrative or legal proceeding or investigation as to which the indemnity provided for in this Article may apply, the indemnified Party shall notify the indemnifying Party of such fact. Any failure of or delay in such notification shall not affect a Party's indemnification obligation unless such failure or delay is materially prejudicial to the indemnifying Party.

Consequential Damages

Other than as expressly provided for in this Agreement, neither Party shall be liable under any provision of this Agreement for any losses, damages, costs or expenses for any

special, indirect, incidental, consequential, or punitive damages, including but not limited to loss of profit or revenue, loss of the use of equipment, cost of capital, cost of temporary equipment or services, whether based in whole or in part in contract, in tort, including negligence, strict liability, or any other theory of liability; provided, however, that damages for which a Party may be liable to the other Party under another agreement will not be considered to be special, indirect, incidental, or consequential damages hereunder.

Force Majeure

As used in this article, a Force Majeure Event shall mean any act of God, labor disturbance, act of the public enemy, war, insurrection, riot, fire, storm or flood, explosion, breakage or accident to machinery or equipment, any order, regulation or restriction imposed by governmental, military or lawfully established civilian authorities, or any other cause beyond a Party's control. A Force Majeure Event does not include an act of negligence or intentional wrongdoing.

If a Force Majeure Event prevents a Party from fulfilling any obligations under this Agreement, the Party affected by the Force Majeure Event (Affected Party) shall promptly notify the other Party, either in writing or via the telephone, of the existence of the Force Majeure Event. The notification must specify in reasonable detail the circumstances of the Force Majeure Event, its expected duration, and the steps that the Affected Party is taking to mitigate the effects of the event on its performance. The Affected Party shall keep the other Party informed on a continuing basis of developments relating to the Force Majeure Event until the event ends. The Affected Party will be entitled to suspend or modify its performance of obligations under this Agreement (other than the obligation to make payments) only to the extent that the effect of the Force Majeure Event cannot be mitigated by the use of Reasonable Efforts. The Affected Party will use Reasonable Efforts to resume its performance as soon as possible.

Default

No Default shall exist where such failure to discharge an obligation (other than the payment of money) is the result of a Force Majeure Event as defined in this Agreement or the result of an act or omission of the other Party. Upon a Default, the non-defaulting Party shall give written notice of such Default to the defaulting Party. Except as provided in Article 7.6.2, the defaulting Party shall have 60 calendar days from receipt of the Default notice within which to cure such Default; provided however, if such Default is not capable of cure within 60 calendar days, the defaulting Party shall commence such cure within 20 calendar days after notice and continuously and diligently complete such cure within six months from receipt of the Default notice; and, if cured within such time, the Default specified in such notice shall cease to exist.

If a Default is not cured as provided in this Article, or if a Default is not capable of being cured within the period provided for herein, the non-defaulting Party shall have the right to terminate this Agreement by written notice, and be relieved of any further obligation hereunder and, whether or not that Party terminates this Agreement, to recover from the defaulting Party all amounts due hereunder, plus all other damages and remedies to which it is entitled at law or in equity. The provisions of this article will survive termination of this Agreement.

Insurance

8.1 The Interconnection Customer shall obtain and retain, for as long as the Generating

Facility is interconnected with the City's System, liability insurance which protects the Interconnection Customer from claims for bodily injury and/or property damage. The amount of such insurance shall be sufficient to insure against all reasonably foreseeable direct liabilities given the size and nature of the generating equipment being interconnected, the interconnection itself, and the characteristics of the system to which the interconnection is made. This insurance shall be primary for all purposes. The Interconnection Customer shall provide certificates evidencing this coverage as required by the City. Such insurance shall be obtained from an insurance provider authorized to do business in North Carolina. The City reserves the right to refuse to establish or continue the interconnection of the Generating Facility with the City's System, if such insurance is not in effect.

For an Interconnection Customer that is a residential customer of the City proposing to interconnect a Generating Facility no larger than 20 kW, the required coverage shall be a standard homeowner's insurance policy with liability coverage in the amount of at least \$100,000 per occurrence.

For an Interconnection Customer that is a non-residential customer of the City proposing to interconnect a Generating Facility no larger than 250 kW, the required coverage shall be comprehensive general liability insurance with coverage in the amount of at least \$300,000 per occurrence.

An Interconnection Customer of sufficient credit-worthiness may propose to provide this insurance via a self-insurance program if it has a self-insurance program established in accordance with commercially acceptable risk management practices, and such a proposal shall not be unreasonably rejected.

- 8.2 The City agrees to maintain general liability insurance or self-insurance consistent with the City's commercial practice. Such insurance or self-insurance shall not exclude coverage for the City's liabilities undertaken pursuant to this Agreement.
- 8.3 The Parties further agree to notify each other whenever an accident or incident occurs resulting in any injuries or damages that are included within the scope of coverage of such insurance, whether or not such coverage is sought.

Confidentiality

- 9.1 Confidential Information shall mean any confidential and/or proprietary information provided by one Party to the other Party that meets the requirements of the North Carolina Public Records Laws including but not limited to N.C.G.S. Sec. 132-1.2.

9.2 Confidential Information does not include information previously in the public domain, required to be publicly submitted or divulged by Governmental Authorities, or necessary to be divulged in an action to enforce these procedures. Each Party receiving Confidential Information shall hold such information in confidence and shall not disclose it to any third party nor to the public without the prior written authorization from the Party providing that information, except to fulfill obligations under these procedures, or to fulfill legal or regulatory requirements.

Each Party shall employ at least the same standard of care to protect Confidential Information obtained from the other Party as it employs to protect its own Confidential Information.

Each Party is entitled to equitable relief, by injunction or otherwise, to enforce its rights under this provision to prevent the release of Confidential Information without bond or proof of

damages, and may seek other remedies available at law or in equity for breach of this provision.

- 9.3 If information is requested by the Commission from one of the Parties that is otherwise required to be maintained in confidence pursuant to this Agreement, the Party shall provide the requested information to the Commission within the time provided for in the request for information. In providing the information to the Commission, the Party may request that the information be treated as confidential and non-public in accordance with North Carolina law and that the information be withheld from public disclosure.

Disputes

- 10.1 The Parties agree to attempt to resolve all disputes arising out of the interconnection process according to the provisions of this Article.
- 10.2 In the event of a dispute, either Party shall provide the other Party with a written notice of dispute. Such notice shall describe in detail the nature of the dispute.
- 10.3 If the dispute has not been resolved within two Business Days after receipt of the notice, either Party may contact the Office of the City Manager for assistance in resolving the dispute.
- 10.4 Each Party agrees to conduct all negotiations in good faith.

Taxes

- 11.1 The Parties agree to follow all applicable tax laws and regulations, consistent with North Carolina and federal policy and revenue requirements.
- 11.2 Each Party shall cooperate with the other to maintain the other Party's tax status. Nothing in this Agreement is intended to adversely affect the City's tax exempt status with respect to the issuance of bonds including, but not limited to, local furnishing bonds.

Miscellaneous

Governing Law, Regulatory Authority, and Rules

The validity, interpretation and enforcement of this Agreement and each of its provisions shall be governed by the laws of the State of North Carolina, without regard to its conflicts of law principles. This Agreement is subject to all Applicable Laws and Regulations. Each Party expressly reserves the right to seek changes in, appeal, or otherwise contest any laws, orders, or regulations of a Governmental Authority.

Amendment

The Parties may amend this Agreement by a written instrument duly executed by both Parties, or under Article 12.12 of this Agreement.

No Third-Party Beneficiaries

This Agreement is not intended to and does not create rights, remedies, or benefits of any character whatsoever in favor of any persons, corporations, associations, or entities other than the Parties, and the obligations herein assumed are solely for the use and benefit of the Parties, their successors in interest and where permitted, their assigns.

Waiver

The failure of a Party to this Agreement to insist, on any occasion, upon strict performance of any provision of this Agreement will not be considered a waiver of any obligation, right, or duty of, or imposed upon, such Party.

Any waiver at any time by either Party of its rights with respect to this Agreement shall not be deemed a continuing waiver or a waiver with respect to any other failure to comply with any other obligation, right, duty of this Agreement. Termination or default of this Agreement for any reason by Interconnection Customer shall not constitute a waiver of the Interconnection Customer's legal rights to obtain an interconnection from the City. Any waiver of this Agreement shall, if requested, be provided in writing.

Entire Agreement

This Agreement, including all Appendices, constitutes the entire agreement between the Parties with reference to the subject matter hereof, and supersedes all prior and contemporaneous understandings or agreements, oral or written, between the Parties with respect to the subject matter of this Agreement. There are no other agreements, representations, warranties, or covenants which constitute any part of the consideration for, or any condition to, either Party's compliance with its obligations under this Agreement.

Multiple Counterparts

This Agreement may be executed in two or more counterparts, each of which is deemed an original but all constitute one and the same instrument.

No Partnership

This Agreement shall not be interpreted or construed to create an association, joint venture, agency relationship, or partnership between the Parties or to impose any partnership obligation or partnership liability upon either Party. Neither Party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, the other Party.

Severability

If any provision or portion of this Agreement shall for any reason be held or adjudged to be invalid or illegal or unenforceable by any court of competent jurisdiction or other Governmental Authority, (1) such portion or provision shall be deemed separate and independent, (2) the Parties shall negotiate in good faith to restore insofar as practicable the benefits to each Party that were affected by such ruling, and (3) the remainder of this Agreement shall remain in full force and effect.

Security Arrangements

Infrastructure security of electric system equipment and operations and control hardware and software is essential to ensure day-to-day reliability and operational security. All Utilities are expected to meet basic standards for electric system infrastructure and operational security, including physical, operational, and cyber-security practices.

Environmental Releases

Each Party shall notify the other Party, first orally and then in writing, of the release of any hazardous substances, any asbestos or lead abatement activities, or any type of remediation activities related to the Generating Facility or the Interconnection Facilities, each of which may reasonably be expected to affect the other Party. The notifying Party shall (1) provide the notice as soon as practicable, provided such Party makes a good faith effort to provide the notice no later than 24 hours after such Party becomes aware of the occurrence, and (2) promptly furnish to the other Party copies of any publicly available reports filed with any Governmental Authorities addressing such events.

Subcontractors

Nothing in this Agreement shall prevent a Party from utilizing the services of any subcontractor as it deems appropriate to perform its obligations under this Agreement; provided, however, that each Party shall require its subcontractors to comply with all applicable terms and conditions of this Agreement in providing such services and each Party shall remain primarily liable to the other Party for the performance of such subcontractor.

The creation of any subcontract relationship shall not relieve the hiring Party of any of its obligations under this Agreement. The hiring Party shall be fully responsible to the other Party for the acts or omissions of any subcontractor the hiring Party hires as if no subcontract had been made; provided, however, that in no event shall the City be liable for the actions or inactions of the Interconnection Customer or its subcontractors with respect to obligations of the Interconnection Customer under this Agreement. Any applicable obligation imposed by this Agreement upon the hiring Party shall be equally binding upon, and shall be construed as having application to, any subcontractor of such Party.

The obligations under this article will not be limited in any way by any limitation of subcontractor's insurance.

Reservation of Rights

Each Party shall have the right to make a request to the City Manager to modify this Agreement with respect to any rates, terms and conditions, charges, or classifications of service, and each Party shall have the right to protest any such filing by the other Party and to participate fully in any proceeding before the City Manager in which such modifications may be considered. Nothing in this Agreement shall limit the rights of the Parties except to the extent that the Parties otherwise agree as provided herein.

Notices

General

Unless otherwise provided in this Agreement, any written notice, demand, or request required or authorized in connection with this Agreement (Notice) shall be deemed properly given if delivered in person, delivered by recognized national courier service, or sent by first class mail, postage prepaid, to the person specified as follows:

If to the Interconnection Customer:

Interconnection Customer: _____

Attention: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____

If to the City:

City: _____

Attention: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____

Billing and Payment

Billings and payments shall be sent to the addresses set out below:

If to the Interconnection Customer:

Interconnection Customer: _____

Attention: _____

Address: _____

City: _____ State: _____ Zip: _____

If to the City:

City: _____

Attention: _____

Address: _____

City: _____ State: _____ Zip: _____

Alternative Forms of Notice

Any notice or request required or permitted to be given by either Party to the other and not required by this Agreement to be given in writing may be so given by telephone, facsimile or e-mail to the telephone numbers and e-mail addresses set out below:

If to the Interconnection Customer:

Interconnection Customer: _____

Attention: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____

E-Mail Address: _____

If to the City:

City: _____

Attention: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____

E-Mail Address: _____

Designated Operating Representative

The Parties may also designate operating representatives to conduct the communications which may be necessary or convenient for the administration of this Agreement. This person will also serve as the point of contact with respect to operations and maintenance of the Party's facilities.

Interconnection Customer's Operating Representative:

Interconnection Customer: _____

Attention: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____

E-Mail Address: _____

City's Operating Representative:

City: _____

Attention: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____

E-Mail Address: _____

Changes to the Notice Information

Either Party may change this information by giving five Business Days written notice prior to the effective date of the change.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their respective duly authorized representatives.

For the City

Name: _____

Title: _____

Date: _____

For the Interconnection Customer

Name: _____

Title: _____

Date: _____

Notary: _____

County: _____

Commission Expires: _____

Appendix 1 to Interconnection Agreement

Glossary of Terms

See Glossary of Terms, Attachment 1 to the City of Concord Interconnection Procedures.

Appendix 2 to Interconnection Agreement

Description and Costs of the Generating Facility, Interconnection Facilities, and Metering Equipment

Equipment, including the Generating Facility, Interconnection Facilities, and metering equipment shall be itemized and identified as being owned by the Interconnection Customer, or the City. The City will provide a best estimate itemized cost, including overheads, of its Interconnection Facilities and metering equipment, and a best estimate itemized cost of the annual operation and maintenance expenses associated with its Interconnection Facilities and metering equipment.

Appendix 3 to Interconnection Agreement

One-line Diagram Depicting the Generating Facility, Interconnection Facilities, Metering Equipment, and Upgrades

Appendix 4 to Interconnection Agreement

Milestones

In-Service Date: _____

Critical milestones and responsibility as agreed to by the Parties:

	Milestone/Date	Responsible Party
(1)	_____	_____
(2)	_____	_____
(3)	_____	_____
(4)	_____	_____
(5)	_____	_____
(6)	_____	_____
(7)	_____	_____
(8)	_____	_____
(9)	_____	_____
(10)	_____	_____

Agreed to by:

For the City _____ Date _____

For the Interconnection Customer _____ Date _____

Appendix 5 to Interconnection Agreement

Additional Operating Requirements for the City's System and Affected Systems Needed to Support the Interconnection Customer's Needs

The City shall also provide requirements that must be met by the Interconnection Customer prior to initiating parallel operation with the City's System.

Appendix 6 to Interconnection Agreement

City's Description of its Upgrades and Best Estimate of Upgrade Costs

The City shall describe Upgrades and provide an itemized best estimate of the cost, including overheads, of the Upgrades and annual operation and maintenance expenses associated with such Upgrades. The City shall functionalize Upgrade costs and annual expenses as either transmission or distribution related.

15.0 Deviations from the City's Technical Standards

All connections to the City's electric system must be constructed in conformance with City standards and specifications. If any conflicts arise between a City and North Carolina standard, the more restrictive standard will apply. The Director of Electric Systems, in consultation with other relevant agencies may allow modifications to the design criteria.

15.1. Modifications to the design criteria:

- a. Must be based on sound engineering principles and practices,
- b. Must not create an unsafe or hazardous situation,
- c. Must be equivalent to the efficiency, functionality, durability, structural integrity, and long-term maintenance of the minimum criteria in this article.

15.2. The Director of Electric Systems is authorized to require studies or other pertinent information to help support or justify the modification.